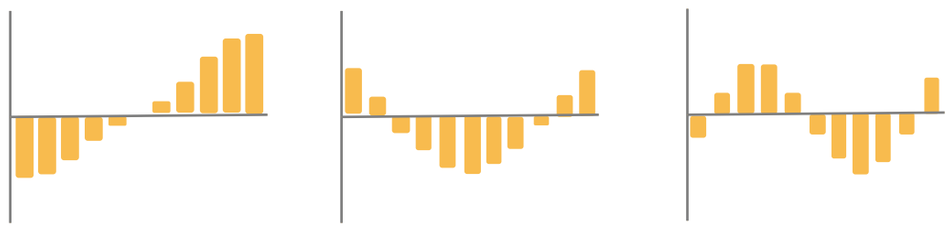
Crafting Impactful Data Stories

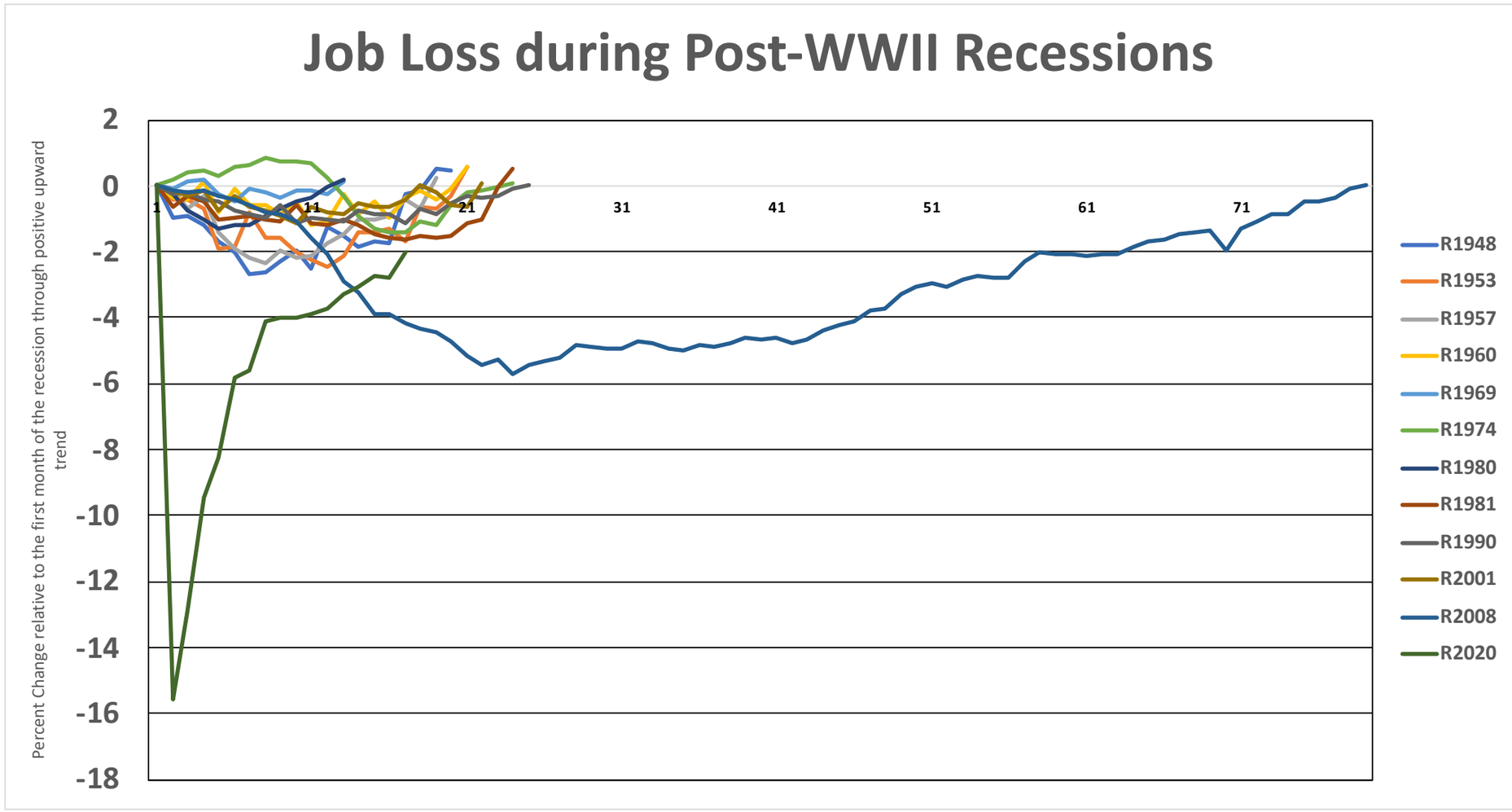
AUBER 2024 Workshop



Design Principles
Charts + Exploration
Storytelling

Marc Schaffer, Ph.D.

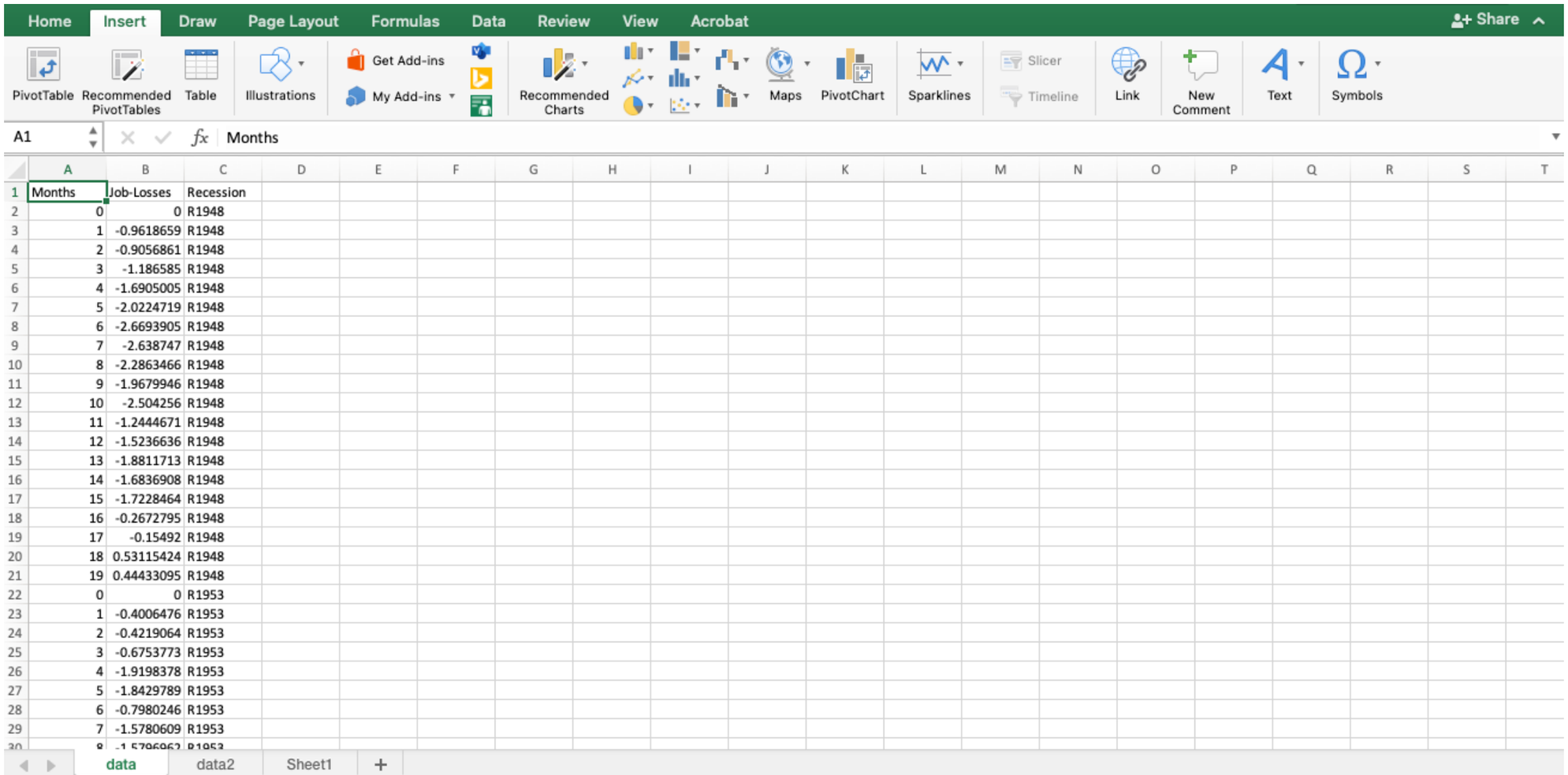
Let’s begin with an example…



Source: Bureau of Labor Statistics

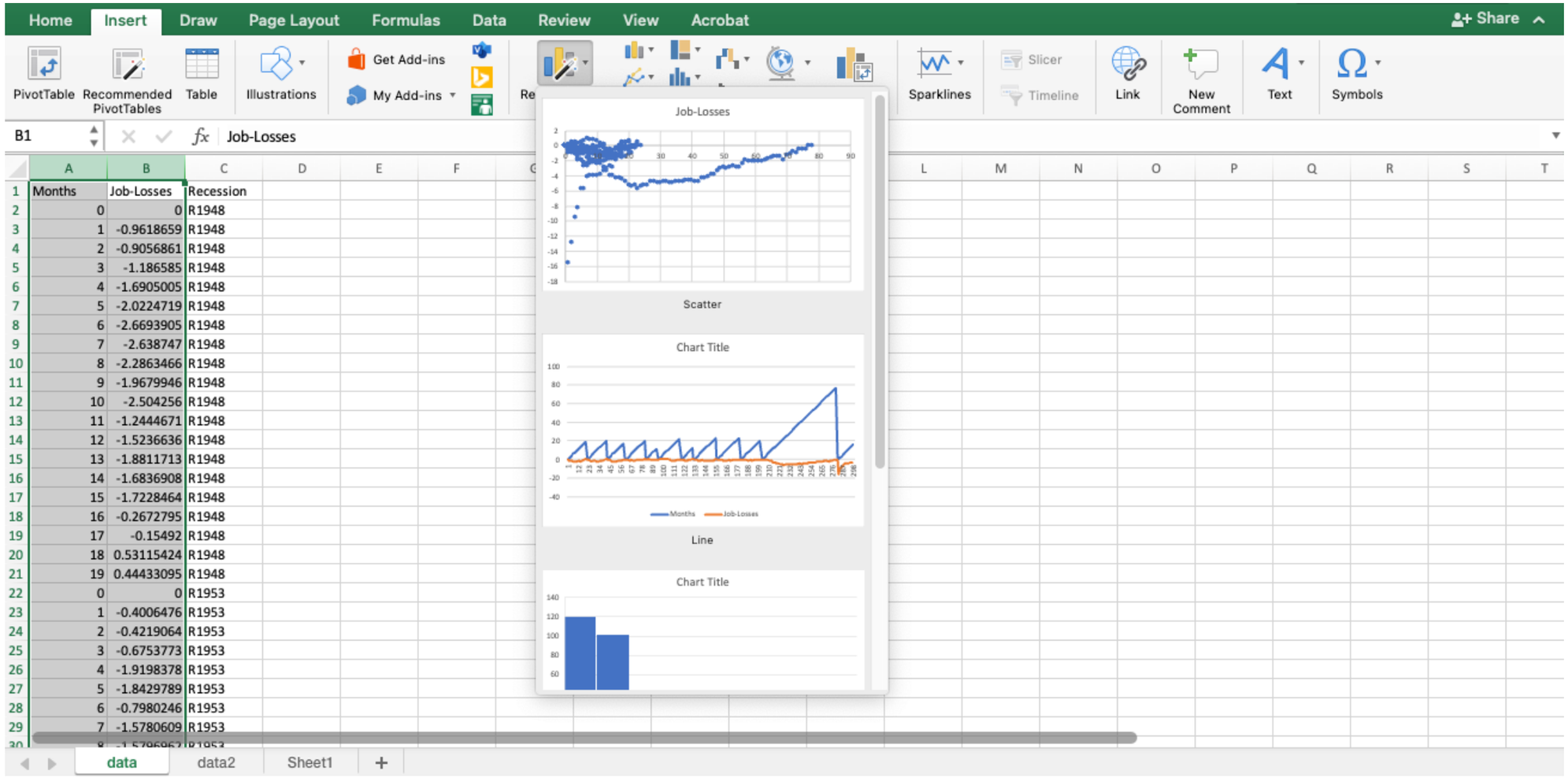
Traditional Data Visualization Process

Step 1: Get the data



	A	B	C
1	Months	Job-Losses	Recession
2	0	0	R1948
3	1	-0.9618659	R1948
4	2	-0.9056861	R1948
5	3	-1.186585	R1948
6	4	-1.6905005	R1948
7	5	-2.0224719	R1948
8	6	-2.6693905	R1948
9	7	-2.638747	R1948
10	8	-2.2863466	R1948
11	9	-1.9679946	R1948
12	10	-2.504256	R1948
13	11	-1.2444671	R1948
14	12	-1.5236636	R1948
15	13	-1.8811713	R1948
16	14	-1.6836908	R1948
17	15	-1.7228464	R1948
18	16	-0.2672795	R1948
19	17	-0.15492	R1948
20	18	0.53115424	R1948
21	19	0.44433095	R1948
22	0	0	R1953
23	1	-0.4006476	R1953
24	2	-0.4219064	R1953
25	3	-0.6753773	R1953
26	4	-1.9198378	R1953
27	5	-1.8429789	R1953
28	6	-0.7980246	R1953
29	7	-1.5780609	R1953

Traditional Data Visualization Process
Step 2: Ask for Excel for a recommendation



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18	16	-0.2672795	R1948
19	17	-0.15492	R1948
20	18	0.53115424	R1948
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23	1	-0.4006476	R1953
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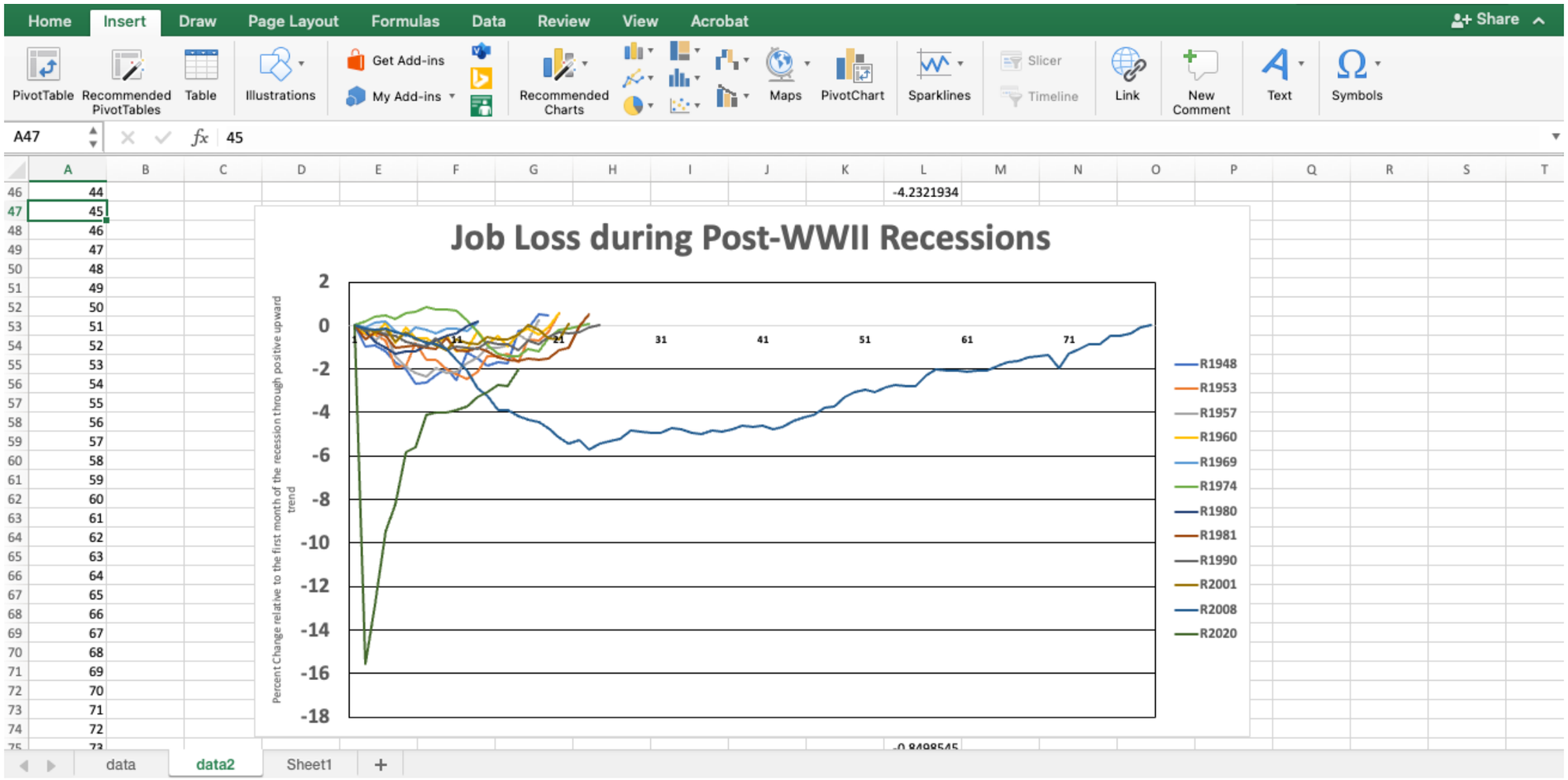
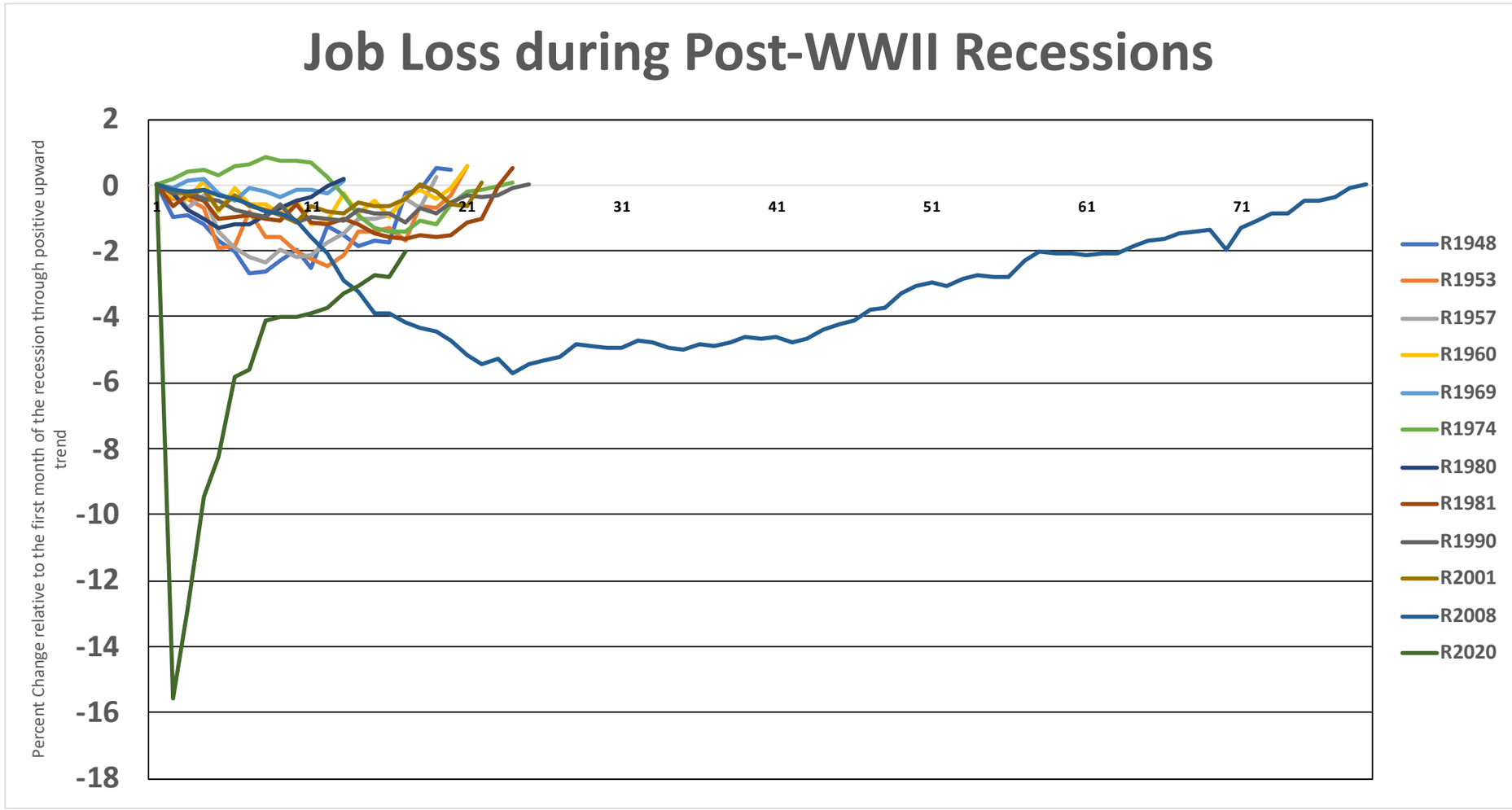
27	5	-1.8429789	R1953
28	6	-0.7980246	R1953
29	7	-1.5780609	R1953

Traditional Data Visualization Process
Step 3: Change labels, titles, formatting



Traditional Data Visualization Process
Step 4: Copy and paste for output

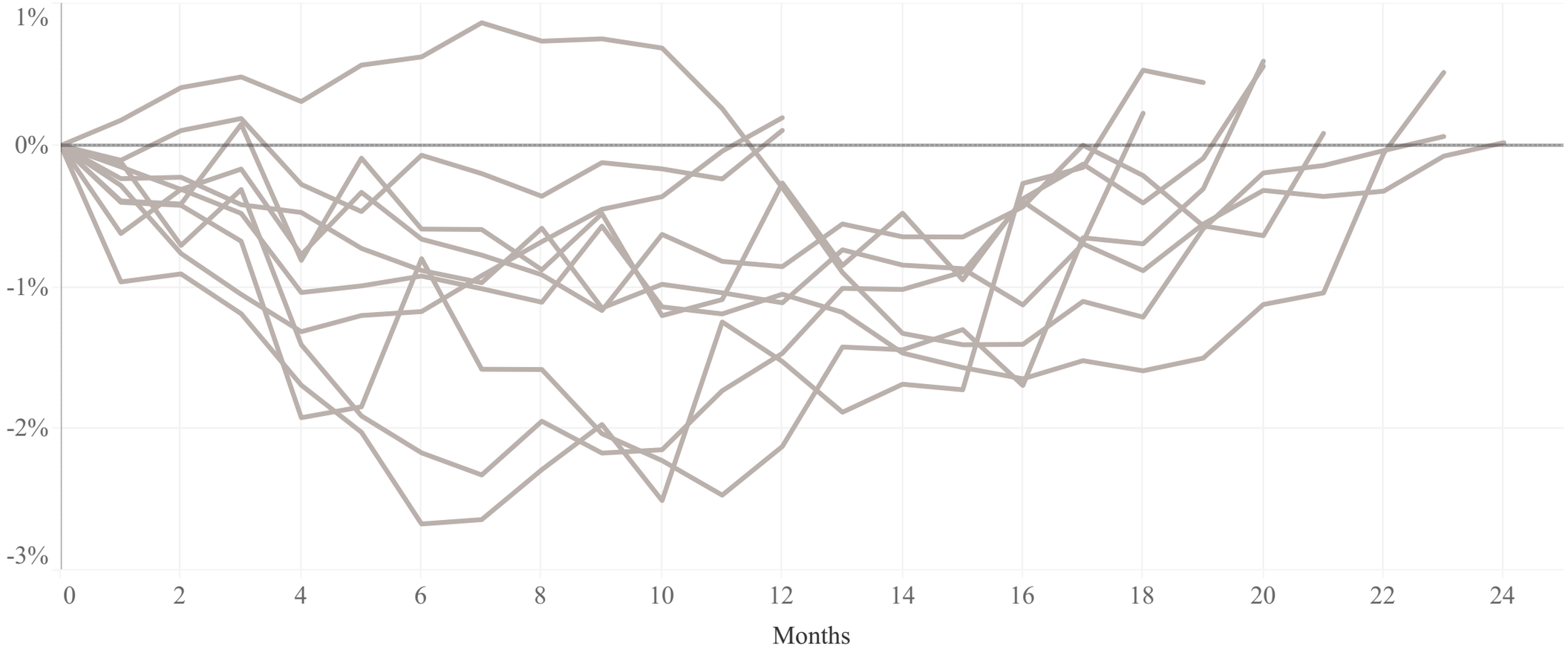


Source: Bureau of Labor Statistics

Is there a better way to tell
the story with this data?

Job Losses during post-WWII Recessions

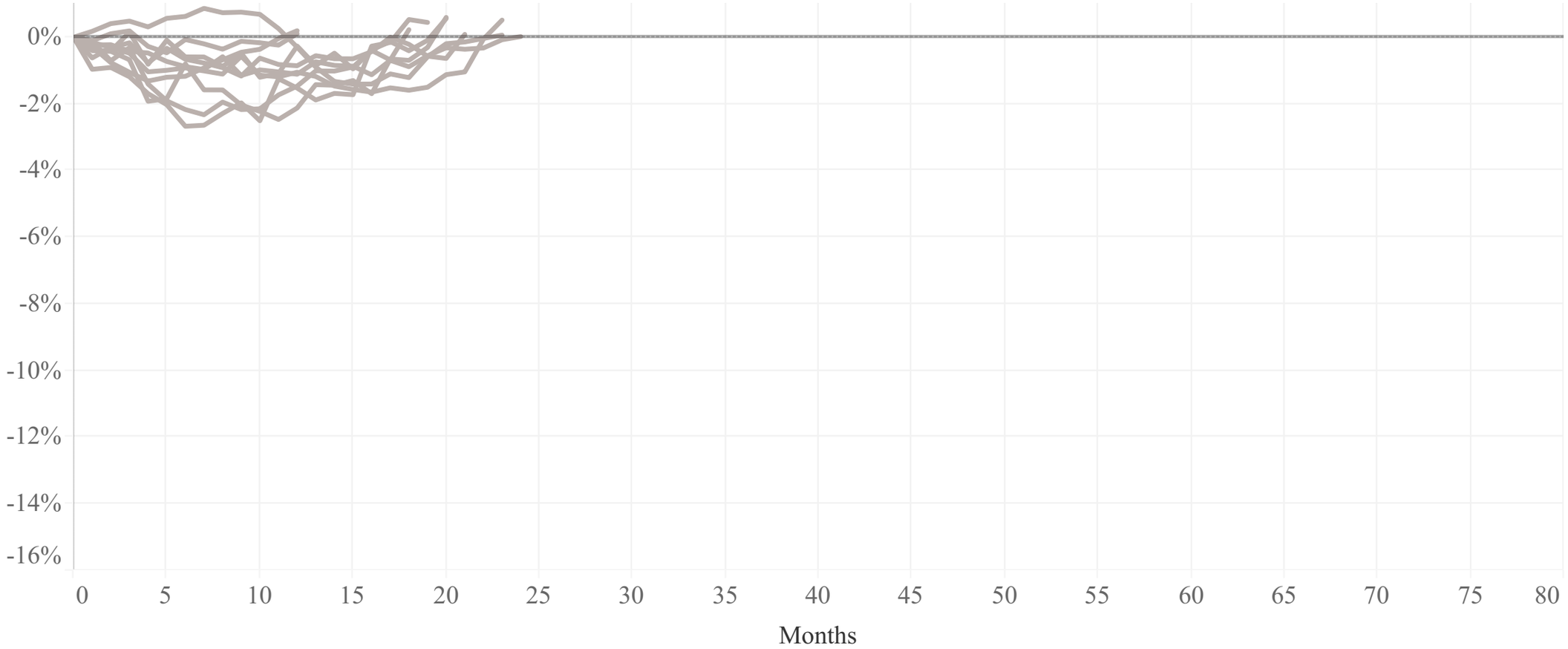
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



Source: Bureau of Labor Statistics

Job Losses during post-WWII Recessions | Typical recessions last between 18-24 months

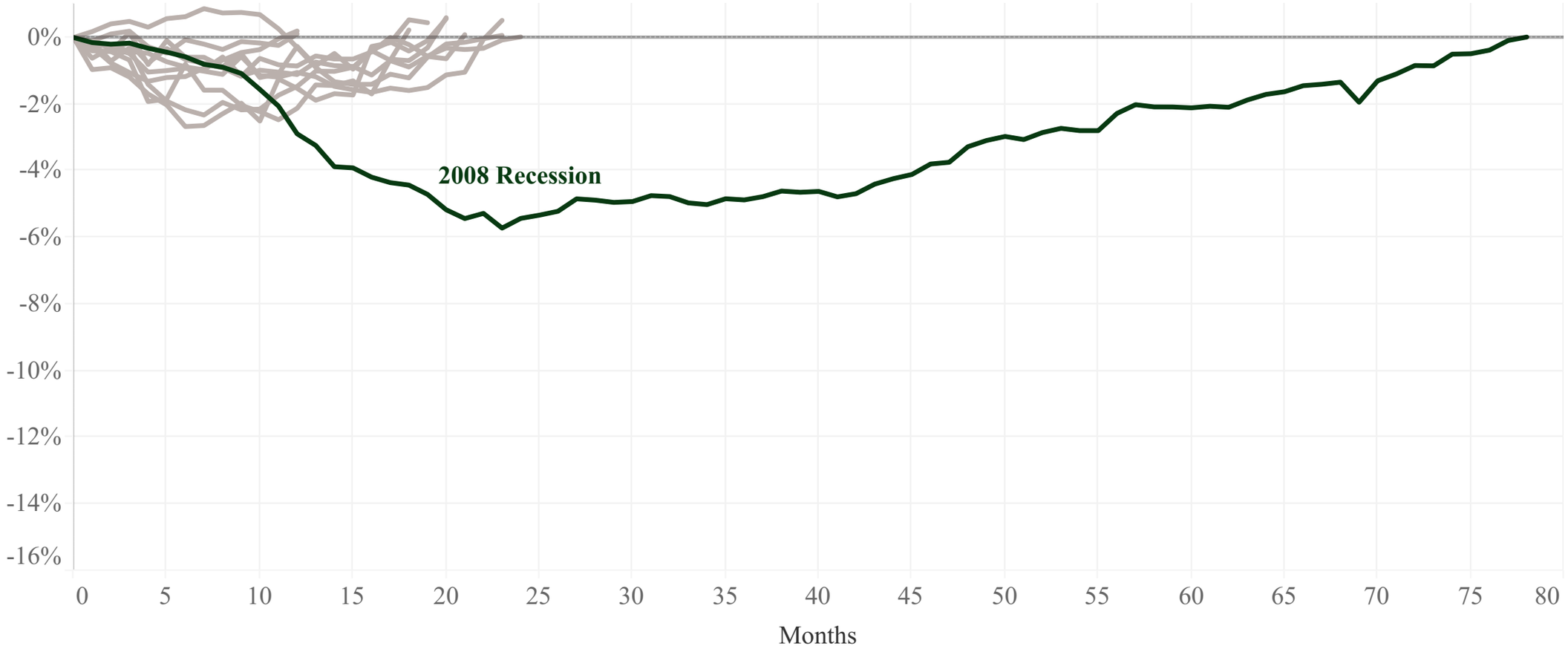
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



Source: Bureau of Labor Statistics

Job Losses during post-WWII Recessions | The 2008 recession added length

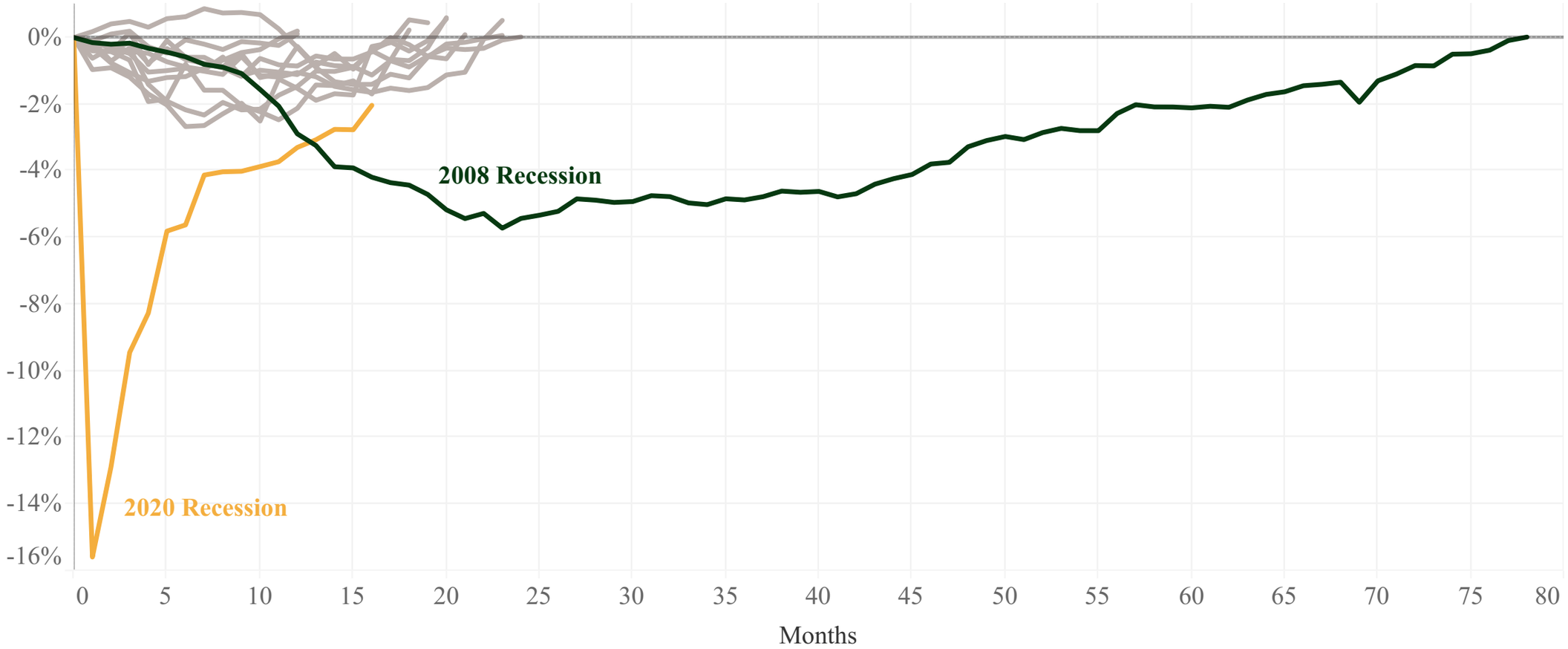
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



Source: Bureau of Labor Statistics

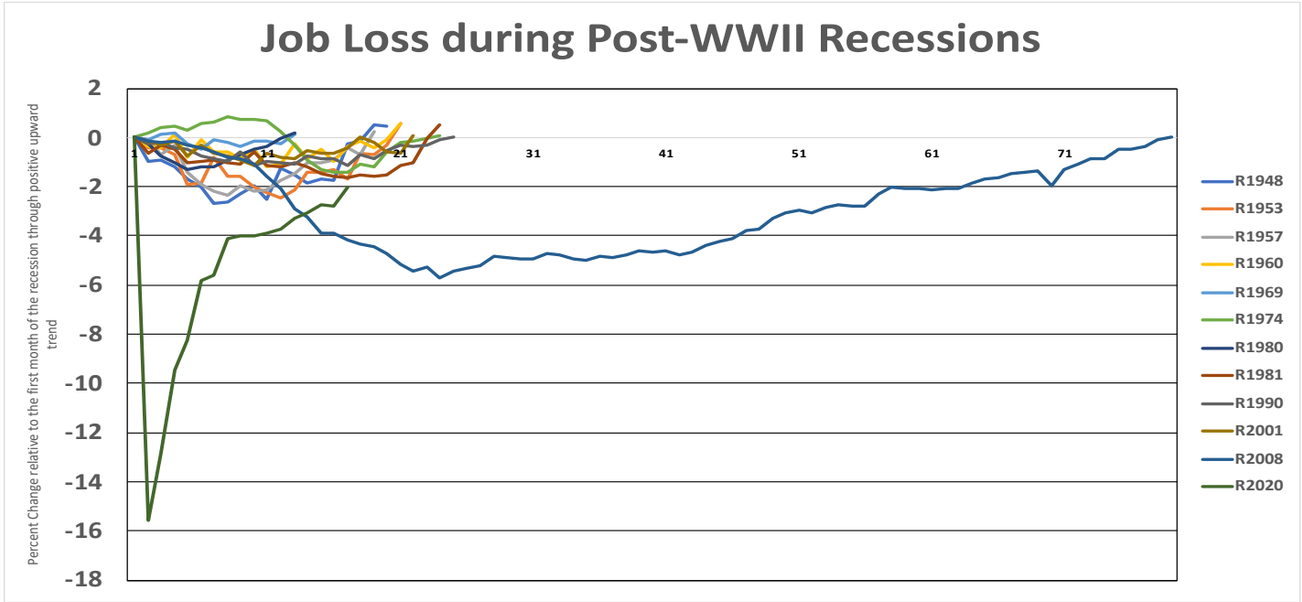
Job Losses during post-WWII Recessions | The 2020 recession added depth

Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)

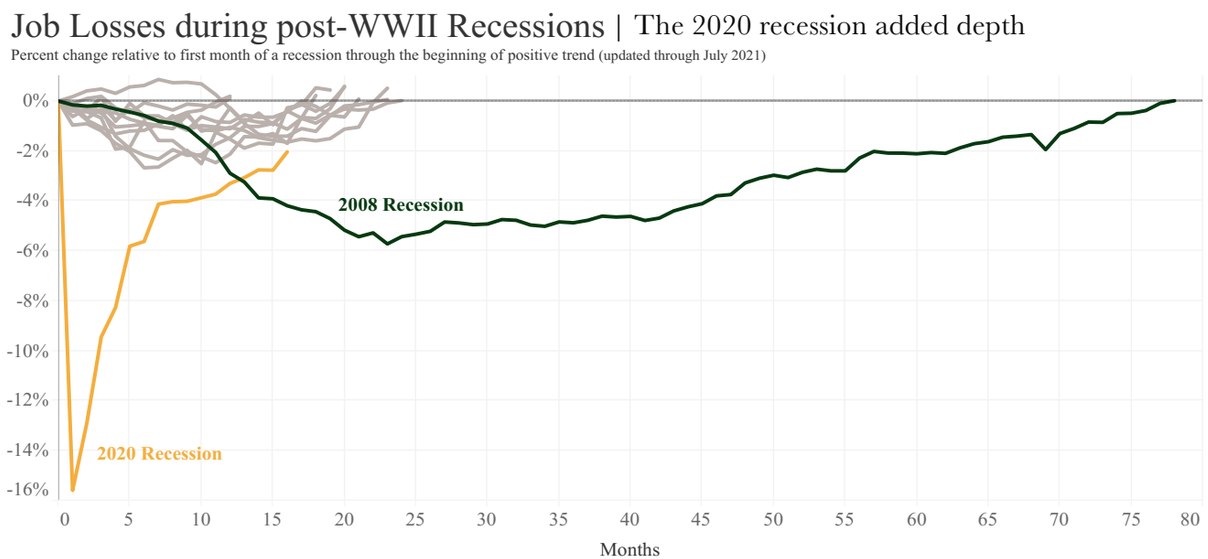


Source: Bureau of Labor Statistics

Before



After



Crafting Impactful Data Stories:

Design Principles
Exploration + Conception
Storytelling

Agenda

Data Visualization Design Principles

Chart Types + EDA

Break

Storytelling

Takeaways

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Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

Crafting Impactful Data Stories:
Design Principles

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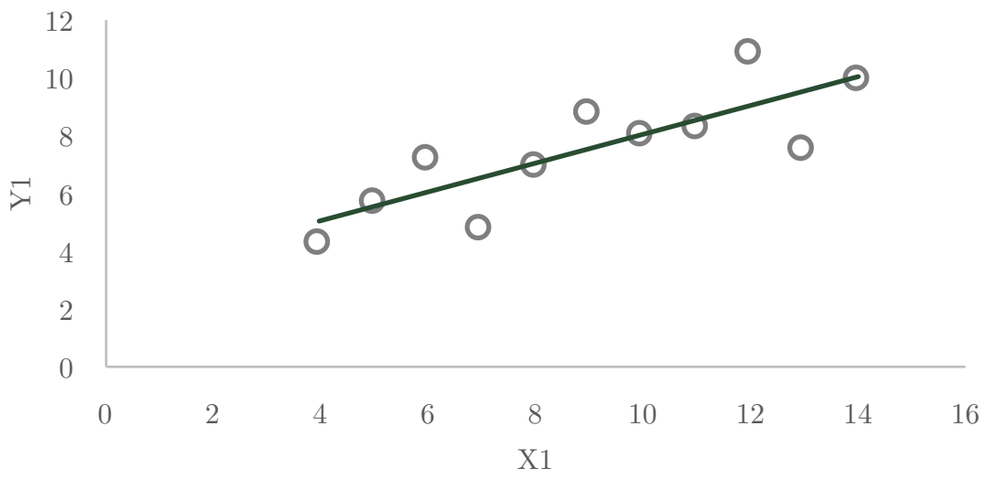
Why do we visualize?

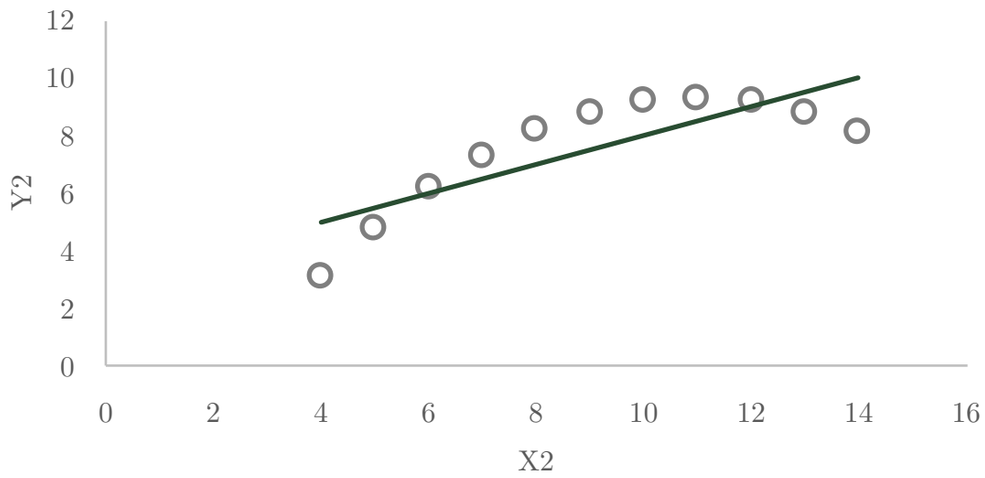
X1	Y1	X2	Y2	X3	Y3	X4	Y4
10	8.04	10	9.14	10	7.46	8	6.58
8	6.95	8	8.14	8	6.77	8	5.76
13	7.58	13	8.74	13	12.74	8	7.71
9	8.81	9	8.77	9	7.11	8	8.84
11	8.33	11	9.26	11	7.81	8	8.47
14	9.96	14	8.1	14	8.84	8	7.04
6	7.24	6	6.13	6	6.08	8	5.25
4	4.26	4	3.1	4	5.39	8	5.56
12	10.84	12	9.13	12	8.15	8	7.91
7	4.82	7	7.26	7	6.42	8	6.89
5	5.68	5	4.74	5	5.73	19	12.5

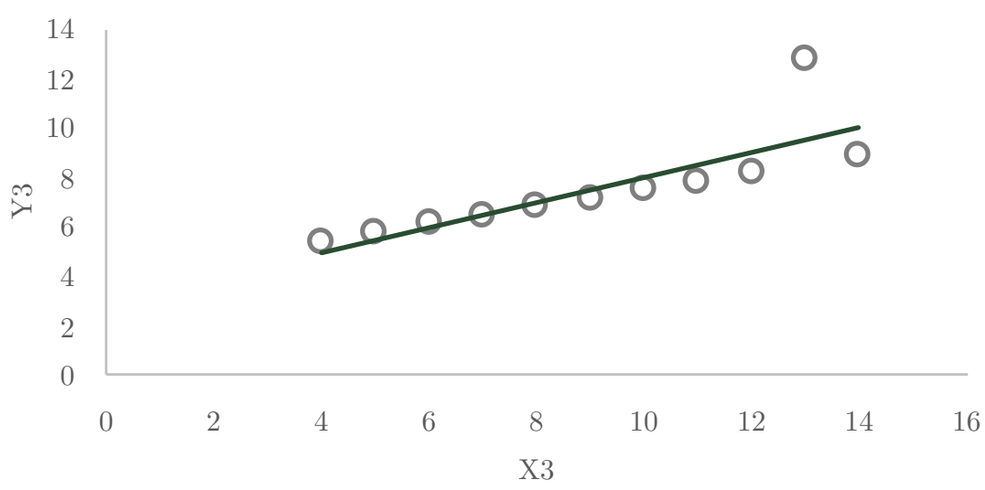
Why do we visualize?

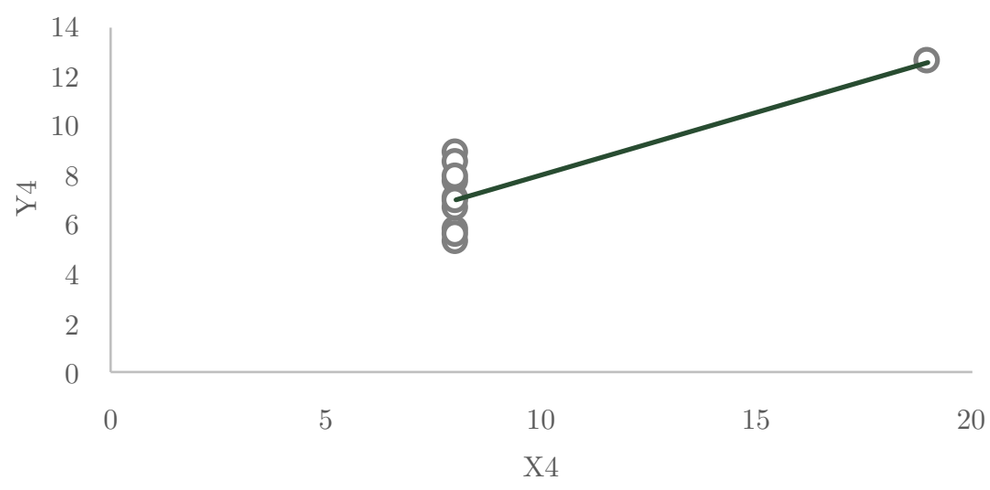
Variables	X1	Y1	X2	Y2	X3	Y3	X4	Y4
Mean	9.00	7.50	9.00	7.50	9.00	7.50	9.00	7.50
Median	9.00	7.58	9.00	8.14	9.00	7.11	8.00	7.04
Std Deviation	3.32	2.03	3.32	2.03	3.32	2.03	3.32	2.03
Variance	11.00	4.13	11.00	4.13	11.00	4.12	11.00	4.12
Correlation	0.82		0.82		0.82		0.82	
Slope	0.50		0.50		0.50		0.50	
Intercept	3.00		3.00		3.00		3.00	

Why do we visualize?



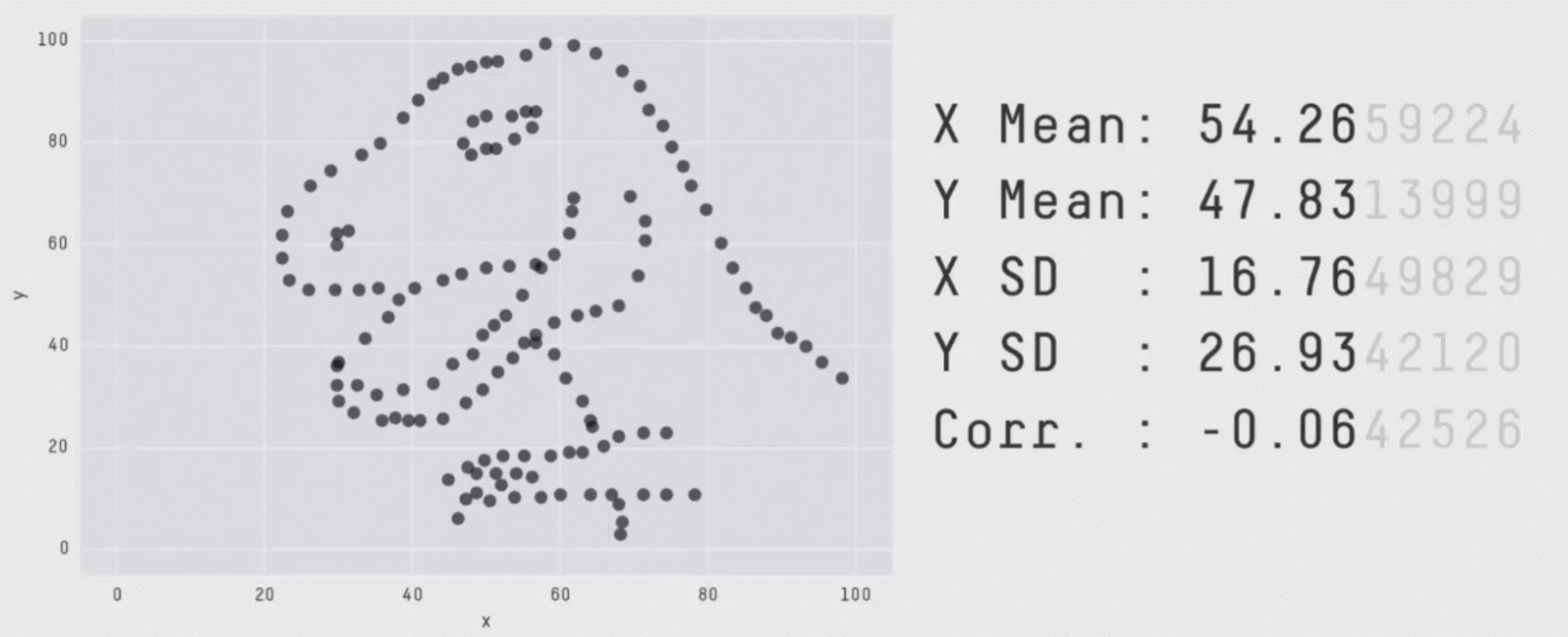






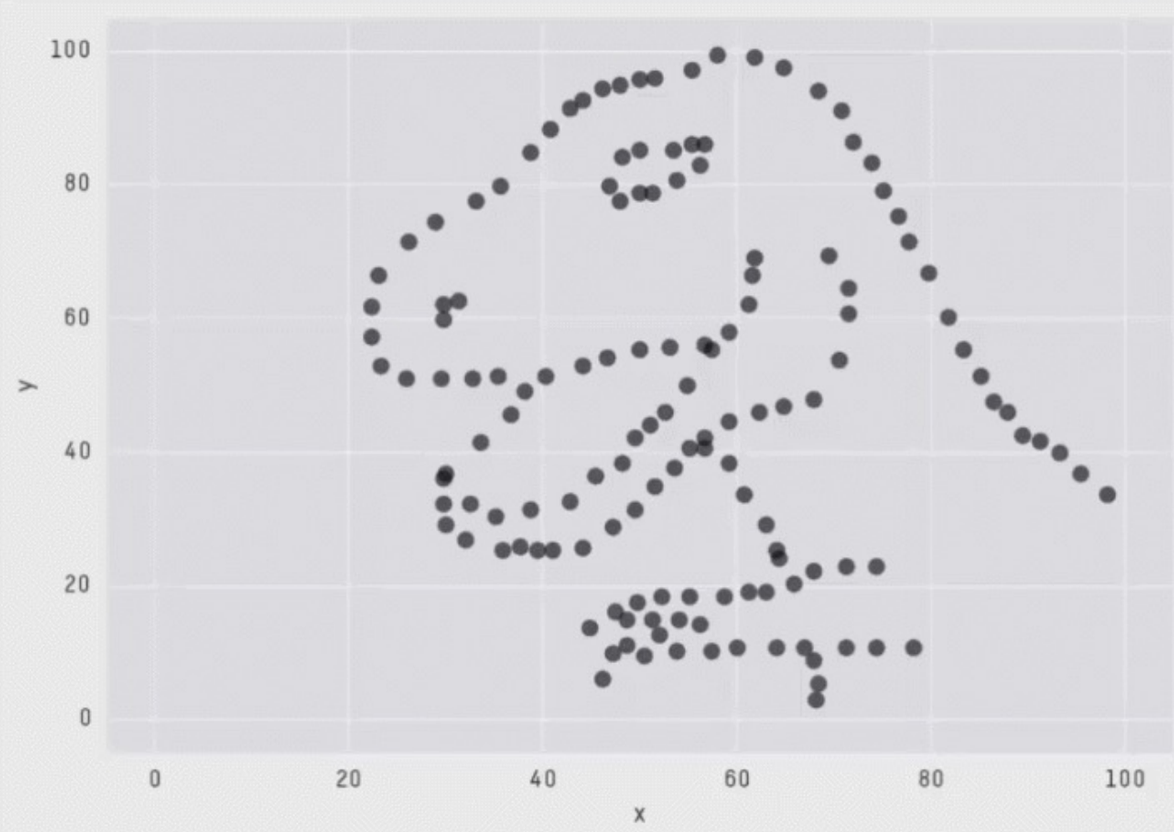
Source: F. J. Anscombe (1973) Graphs in Statistical Analysis, The American Statistician, 27:1, 17-21

Why do we visualize?



Source: Fitmaurice & Matejka (2017)

Why do we visualize?



X Mean: 54.2659224
Y Mean: 47.8313999
X SD : 16.7649829
Y SD : 26.9342120
Corr. : -0.0642526

Source: Fitmaurice & Matejka (2017)

Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

Psychology +
Visual Perception

No. 1 | What we See

No. 2 | Gestalt

No. 3 | Attributes

No. 1 | Visual Perception & What we See

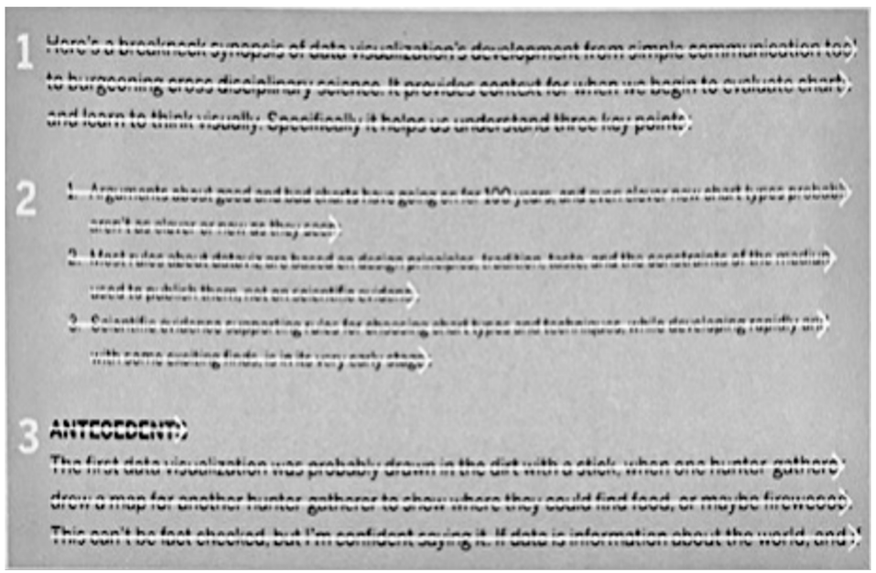
When we see a chart, how do we see? Some considerations:

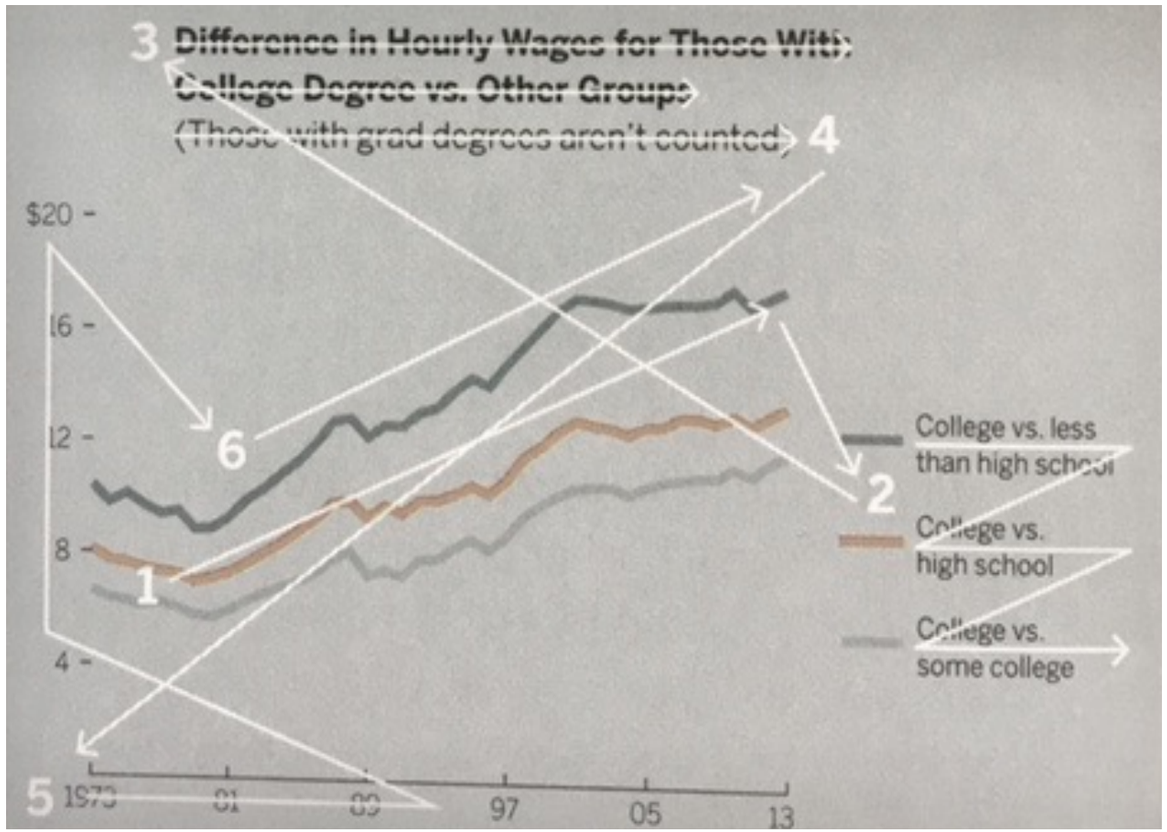
- We don't go in order.
- We see first what stands out.
- We can only see a few things at once.
- We seek meaning and make connections.
- We rely on conventions and metaphors.

Adapted from Good Charts by Berinato

No. 1 | Visual Perception & What we See

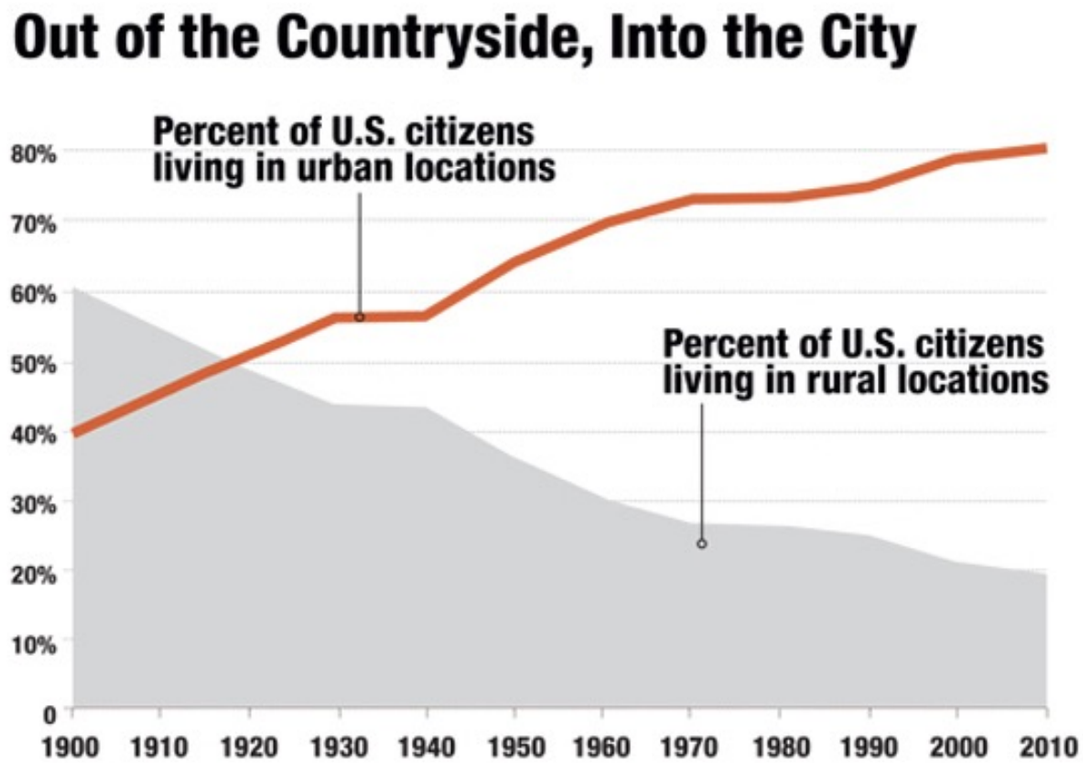
We don’t go in order.





No. 1 | Visual Perception & What we See

We see first what stands out.



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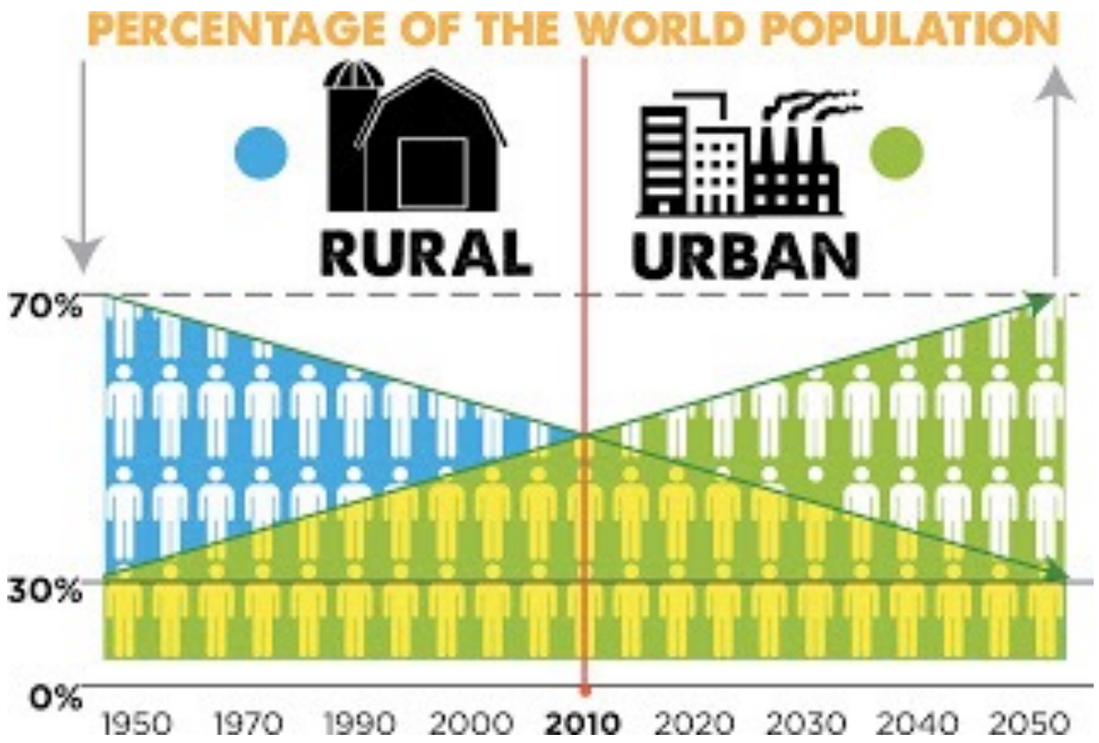
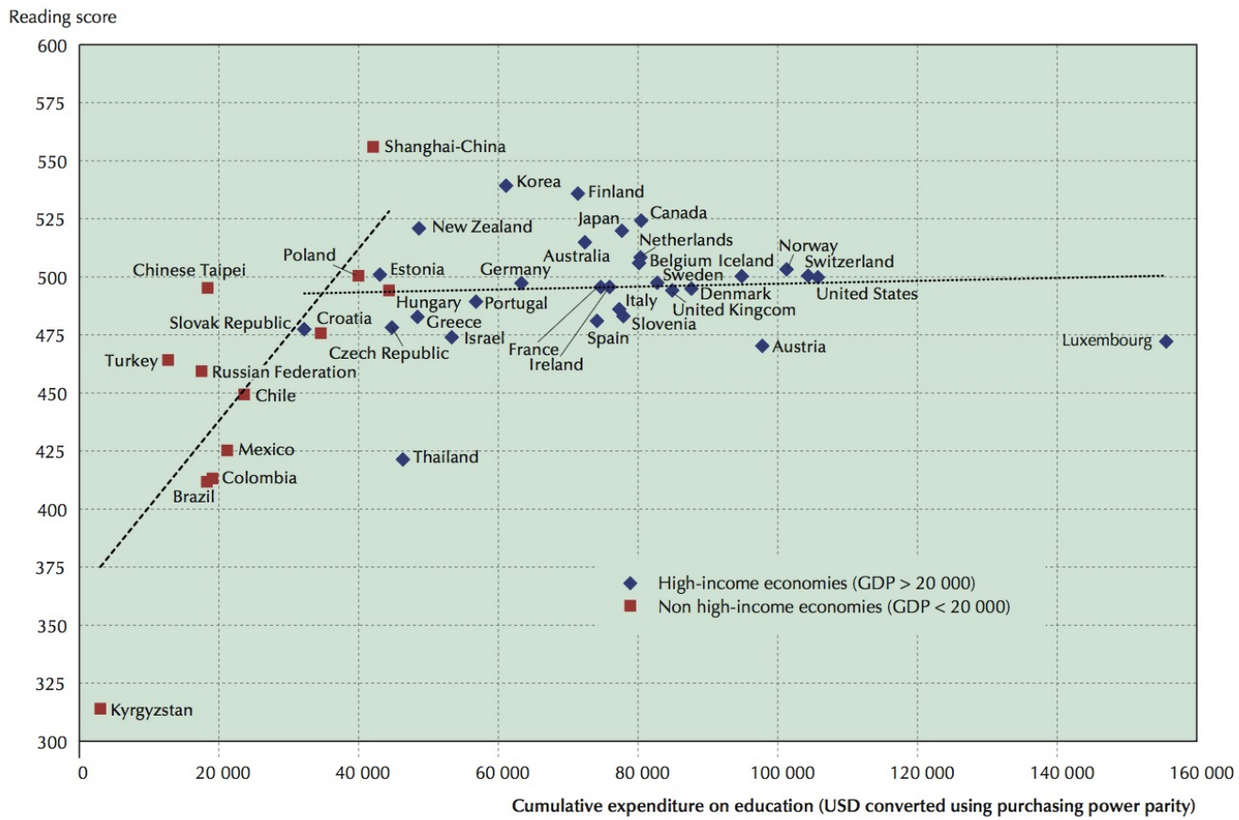


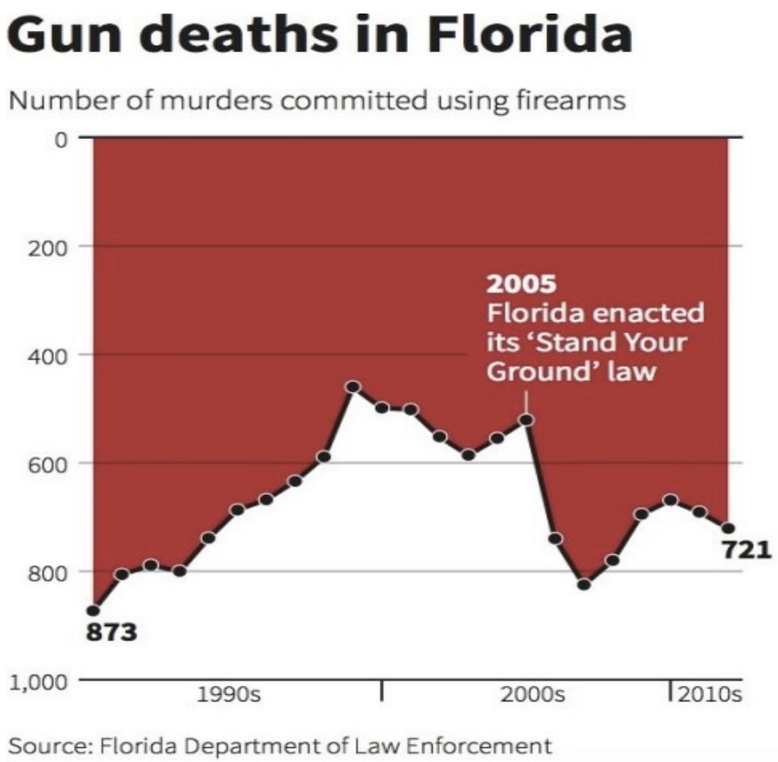
No. 1 | Visual Perception & What we See

We seek meaning and make connections.



No. 1 | Visual Perception & What we See

We rely on conventions & metaphors.



No. 2

Principles of Visual Perception

1. Proximity
2. Similarity
3. Enclosure
4. Closure
5. Continuity
6. Connection

Adapted from Storytelling with Data by Knaflic

No. 2 | Gestalt: Proximity

Objects that are physically close together tend to belong as a group.

No. 2 | Gestalt: Similarity

Objects that are of similar color, shape, size or orientation tend to belong to a group.

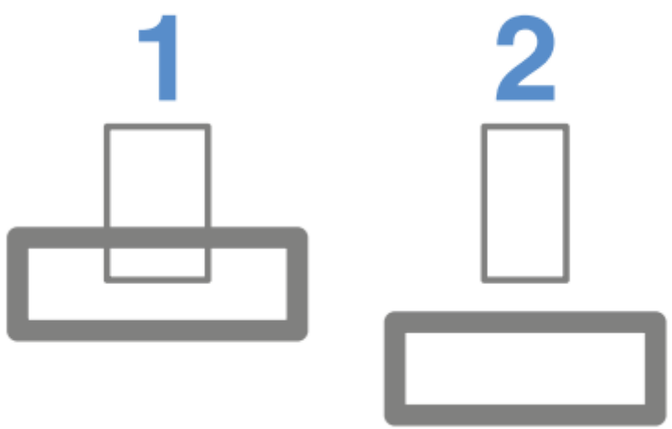
No. 2 | Gestalt: Enclosure

Objects that are physically enclosed together tend to belong together as a group.

No. 2 | Gestalt: Closure

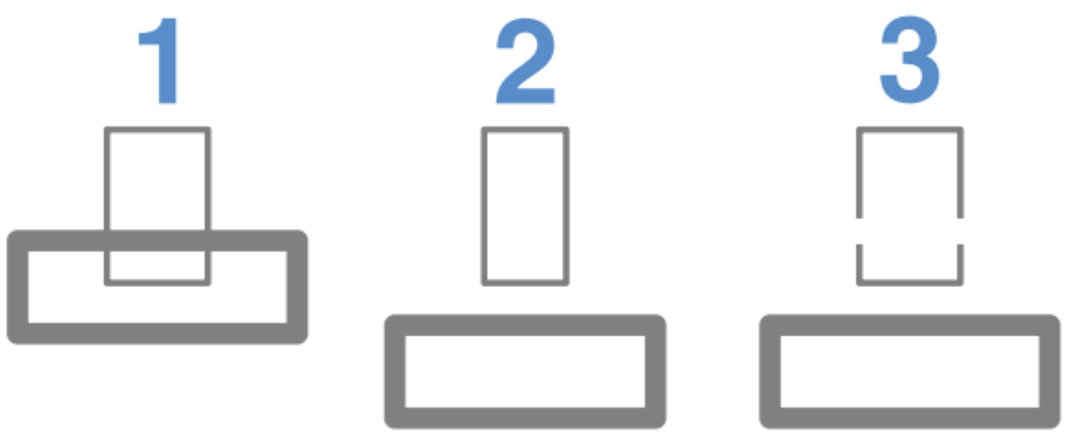
Individual elements will be perceived as a single recognizable shape when possible.

No. 2 | Gestalt: Continuity



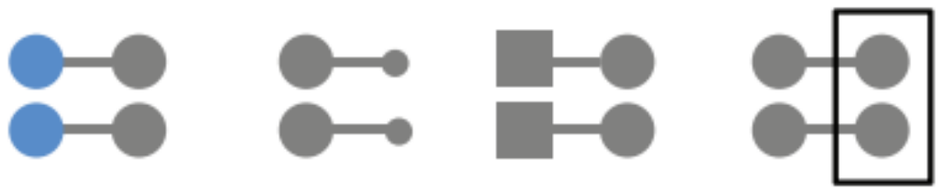
Individuals will visually perceive natural continuity regardless of its actual existence.

No. 2 | Gestalt: Continuity



Individuals will visually perceive natural continuity regardless of its actual existence.

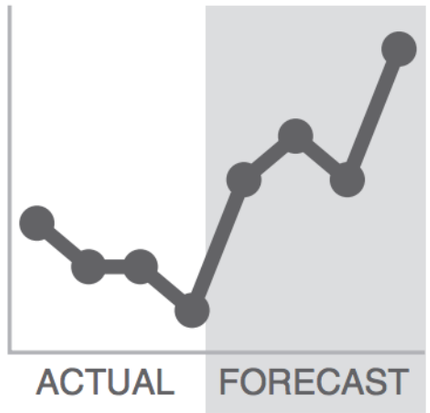
No. 2 | Gestalt: Connection

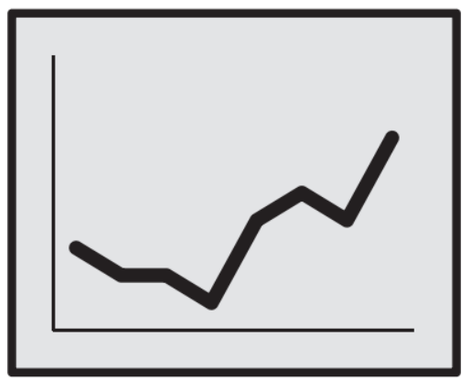


Objects that are physically connected will be perceived as part of a group.

No. 2 | Gestalt + Data Visualization

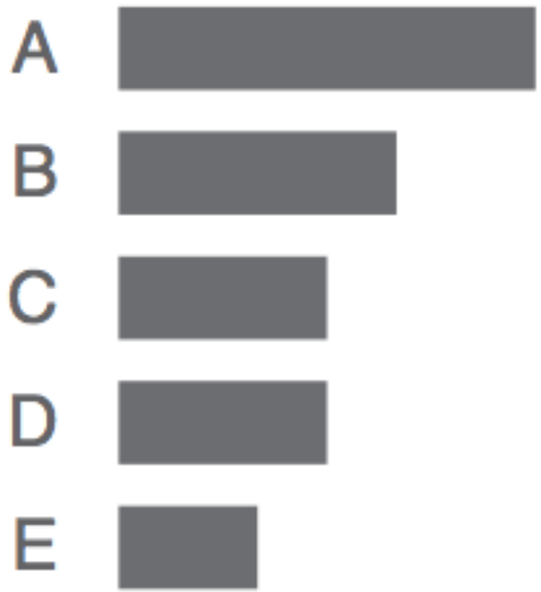
Proximity
Similarity
Enclosure
Closure
Continuity
Connection

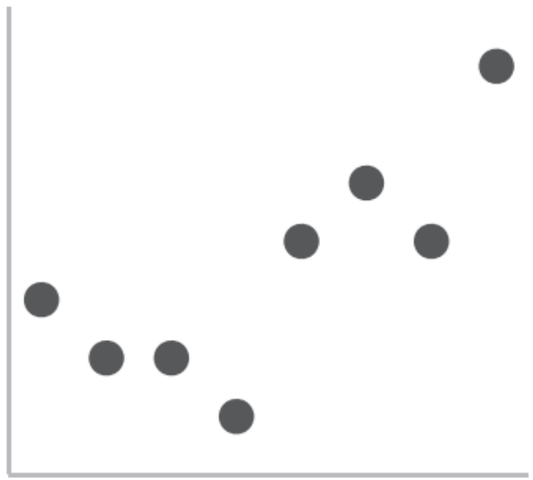


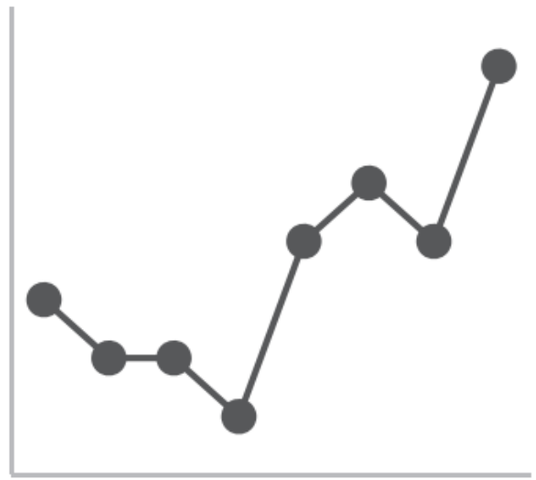


No. 2 | Gestalt + Data Visualization

Proximity
Similarity
Enclosure
Closure
Continuity
Connection







Preattentive vs. Attentive Attributes

Attentive Visual Processing

- The conscious, reflective part of perception that allows for deliberate processing and sequential ordering.

Preattentive Visual Processing

- The more automatic form of visual processing that relies on initial perceptions and how those link to existing memories.

Preattentive vs. Attentive Attributes

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Key: Preattentive Processing is much faster and can be leveraged to enhance visualizations.

789632910387 59

1435786532095 7

1275839205330 9

8767398654135 9

78963291038759

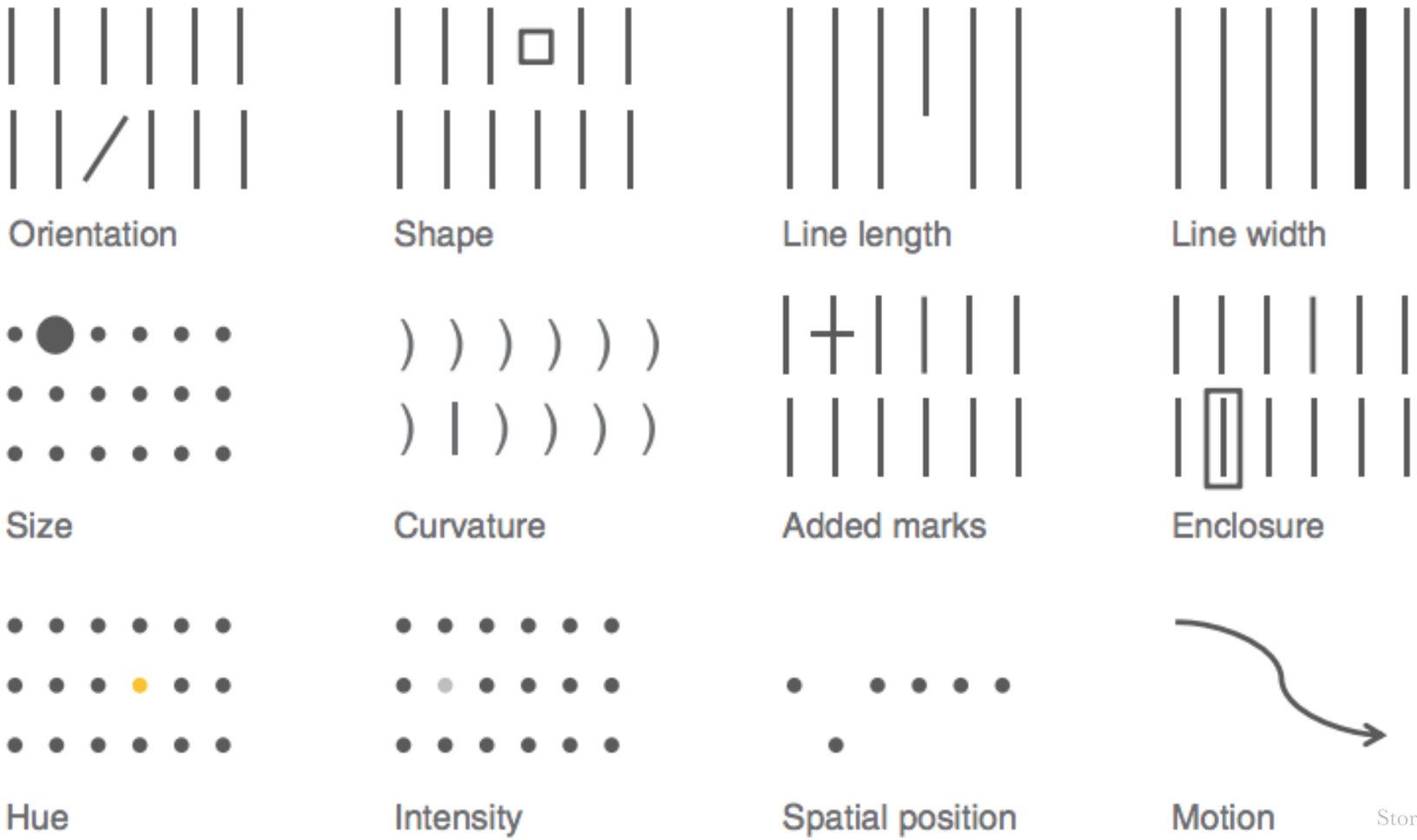
14357865320957

12758392053309

87673986541359

789632910387591435786532095712758392053309876739865413 59

Preattentive Attributes



Preattentive attributes are to data visualizations like…

SQUIRREL!

is to Dug from Pixar's Up.

Psychology +
Visual Perception

No. 1 | What we See

No. 2 | Gestalt

No. 3 | Attributes

Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

Data Visualization Process Simplified

No. 1 | Think

No. 2 | Sketch

No. 3 | Create

No. 4 | Articulate

Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

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No.5 Takeaways

No. 1
Think

What's the goal of this visual? What's the main idea?

No. 1
Think

What's the goal of this visual? What's the main idea?

Who is the audience?

No. 1
Think

What's the goal of this visual? What's the main idea?

Who is the audience?

What is the medium of distribution?

No. 1
Think

What's the goal of this visual? What's the main idea?

Who is the audience?

What is the medium of distribution?

Is this visual exploratory or declarative?

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Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

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Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

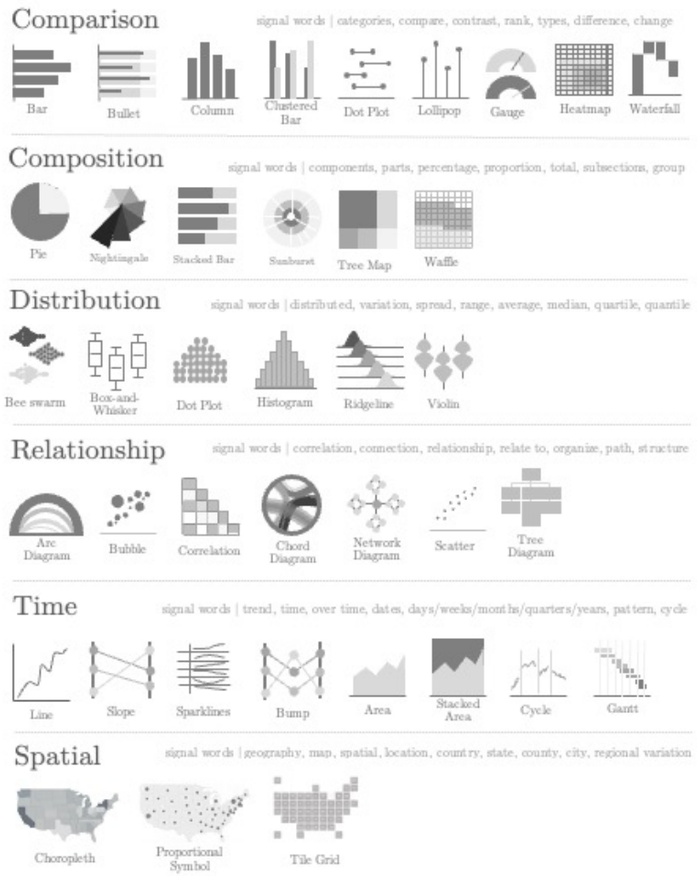
No. 2
Sketch

Using your data and main idea as a guide, explore chart type possibilities.

Types of Charts

Chart Types

Comparison
Composition
Distribution
Relationship
Time
Spatial



No. 2
Sketch

Using your data and main idea as a guide, explore chart type possibilities.

Be creative

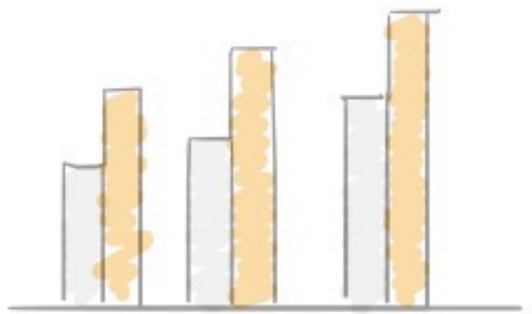
No. 2
Sketch

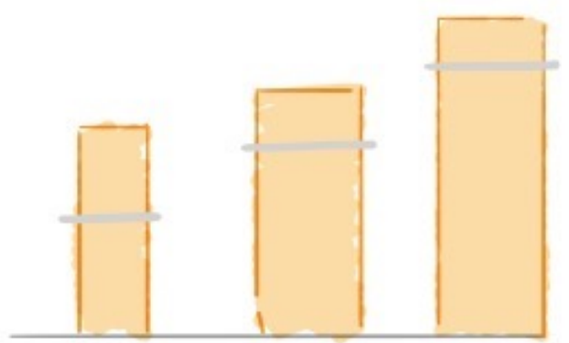
Using your data and main idea as a guide, explore chart type possibilities.

Be creative

Sketch multiple data visualization possibilities, select the best design to prototype

No. 2
Sketch





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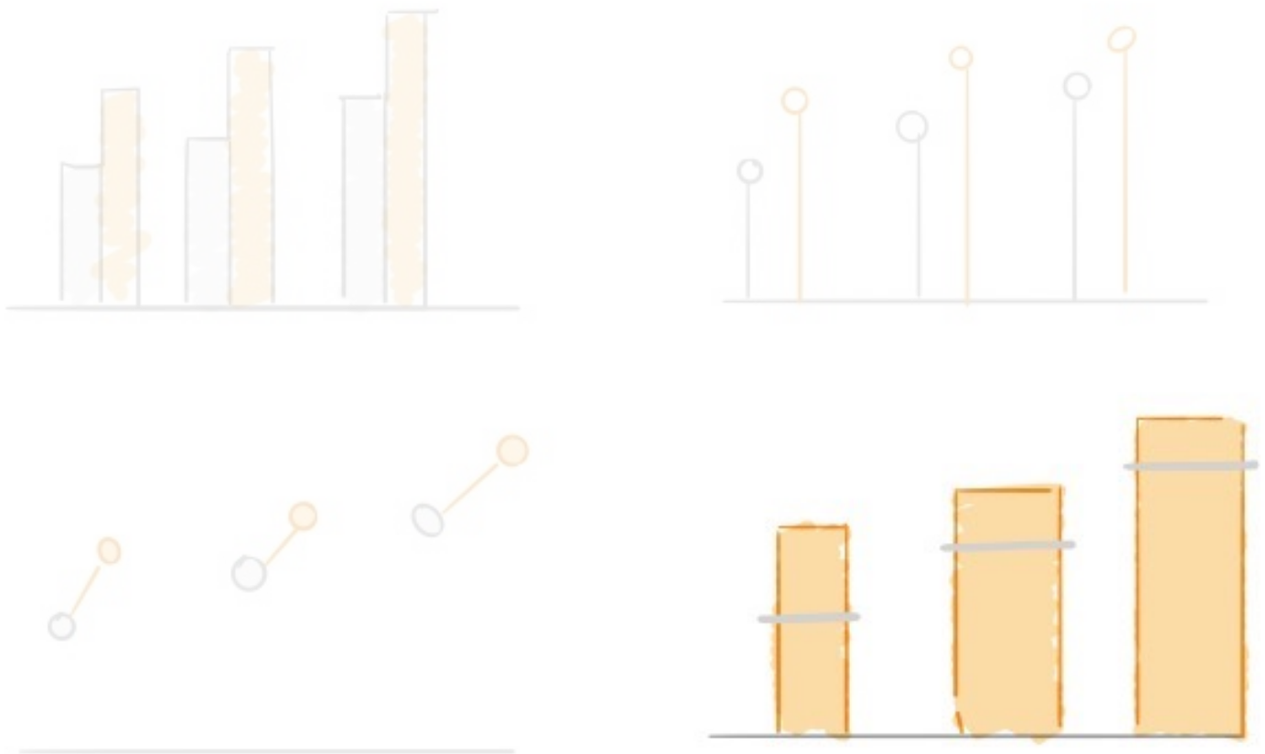


Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

No. 3
Create

Create a digital prototype of your sketch

Leverage any and all tools at your disposal

No. 3
Create

Create a digital prototype of your sketch

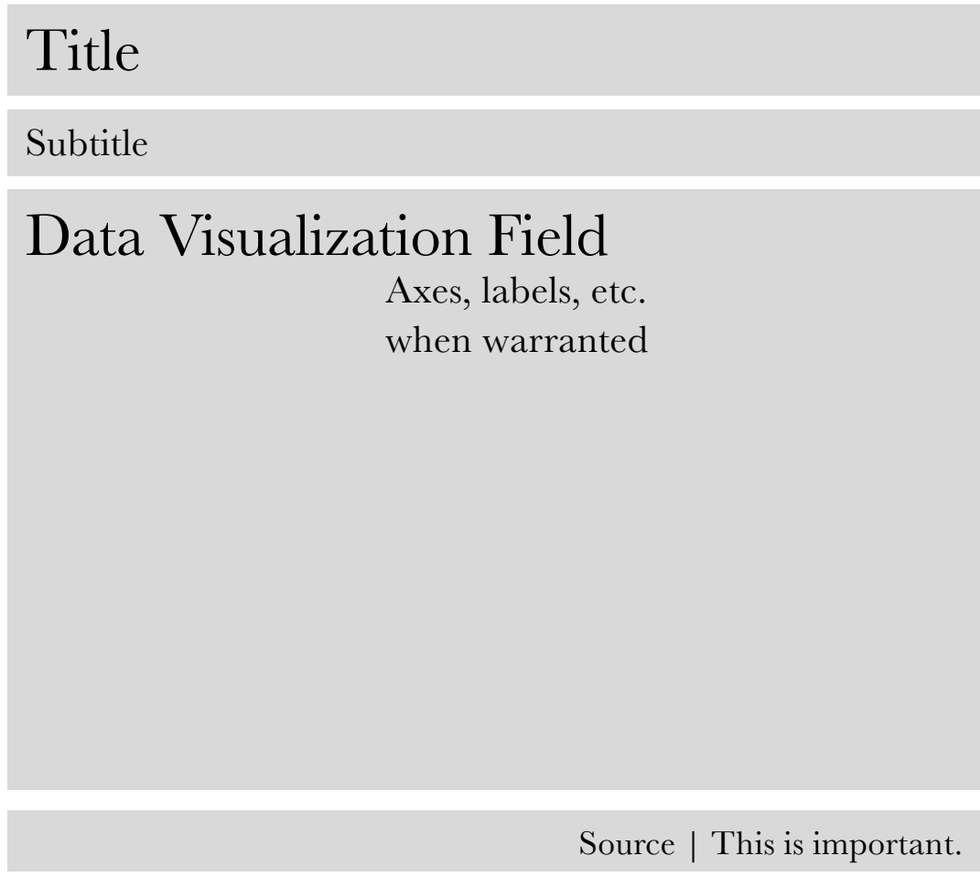
Leverage any and all tools at your disposal

Structure

No. 3 Create

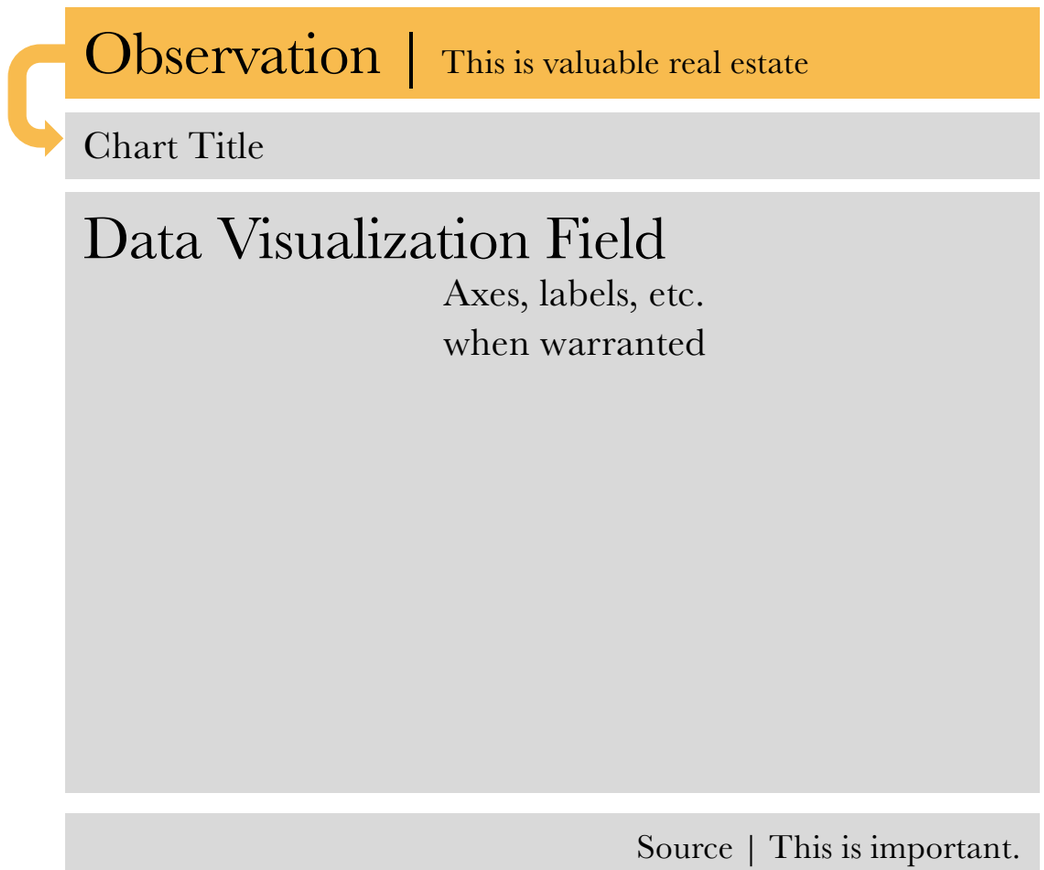
Structure | Standard

Key Elements



No. 3 Create

Structure | Rethink the use of titles to convey meaning



No. 3 Create

Structure | Rethink the use of titles to convey meaning

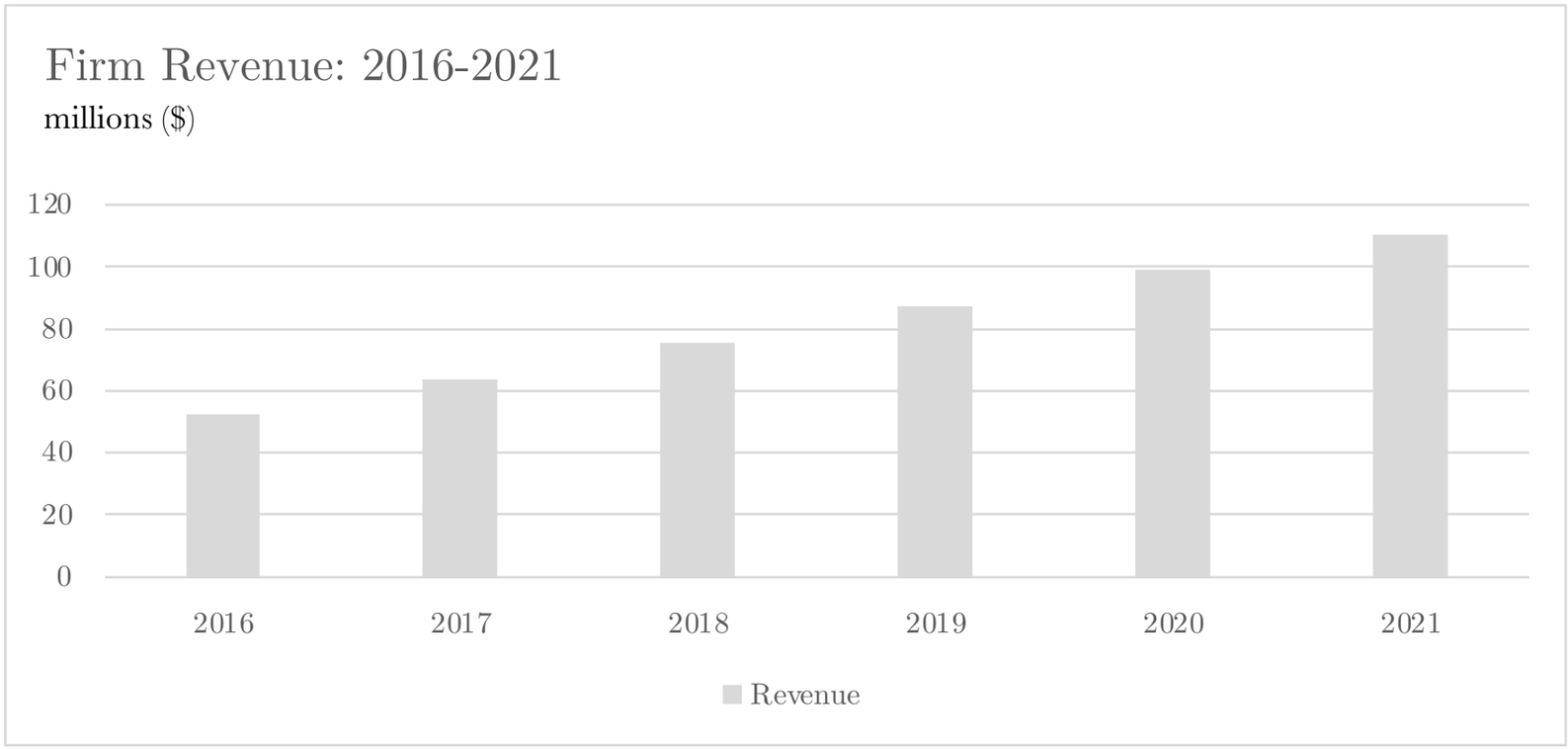
Firm Revenue: 2016-2021

millions ($)

Year	Revenue
2016	52.6
2017	63.7
2018	75.3
2019	87.1
2020	99.2
2021	110.2

No. 3 Create

Structure | Rethink the use of titles to convey meaning



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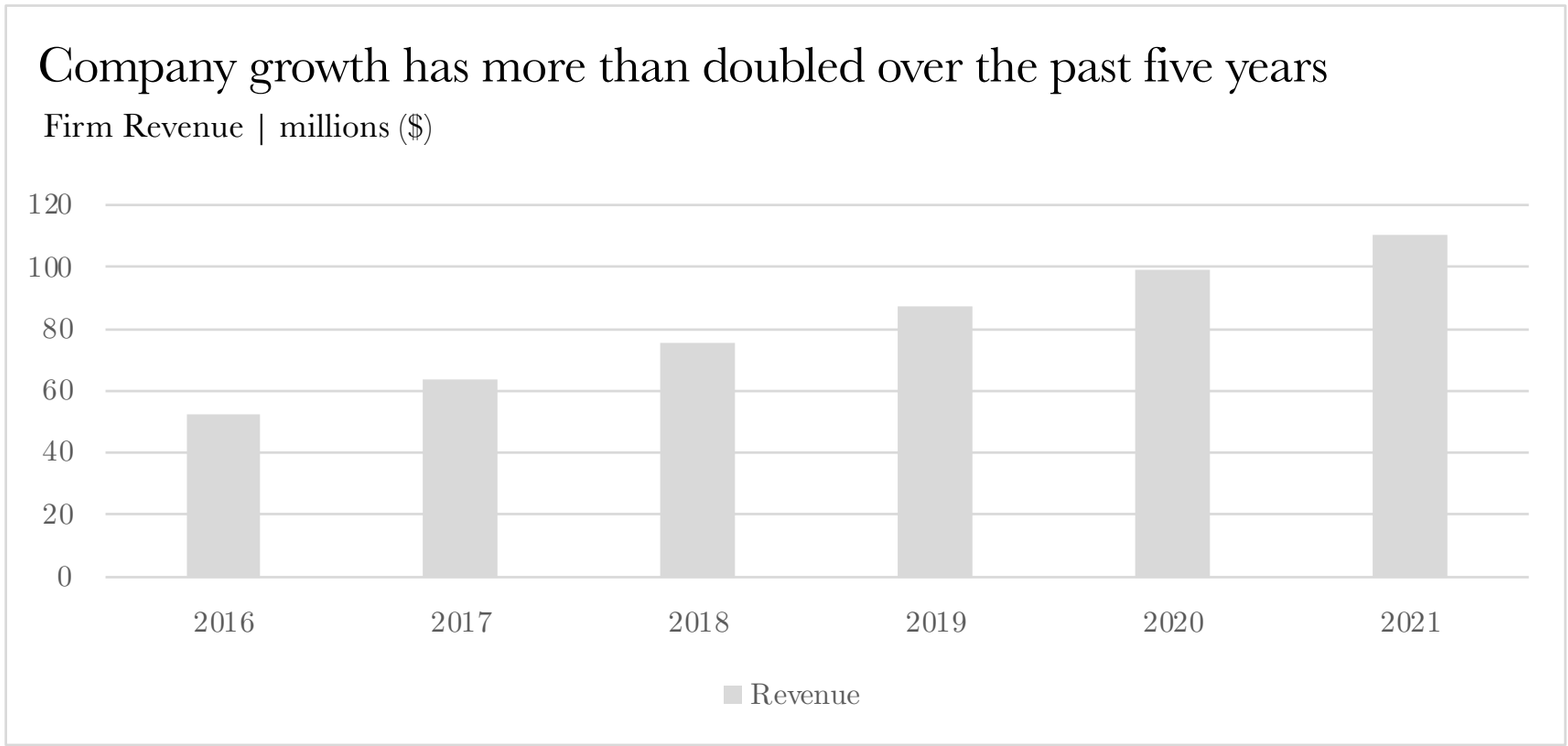


No. 3
Create

Create a digital prototype of your sketch

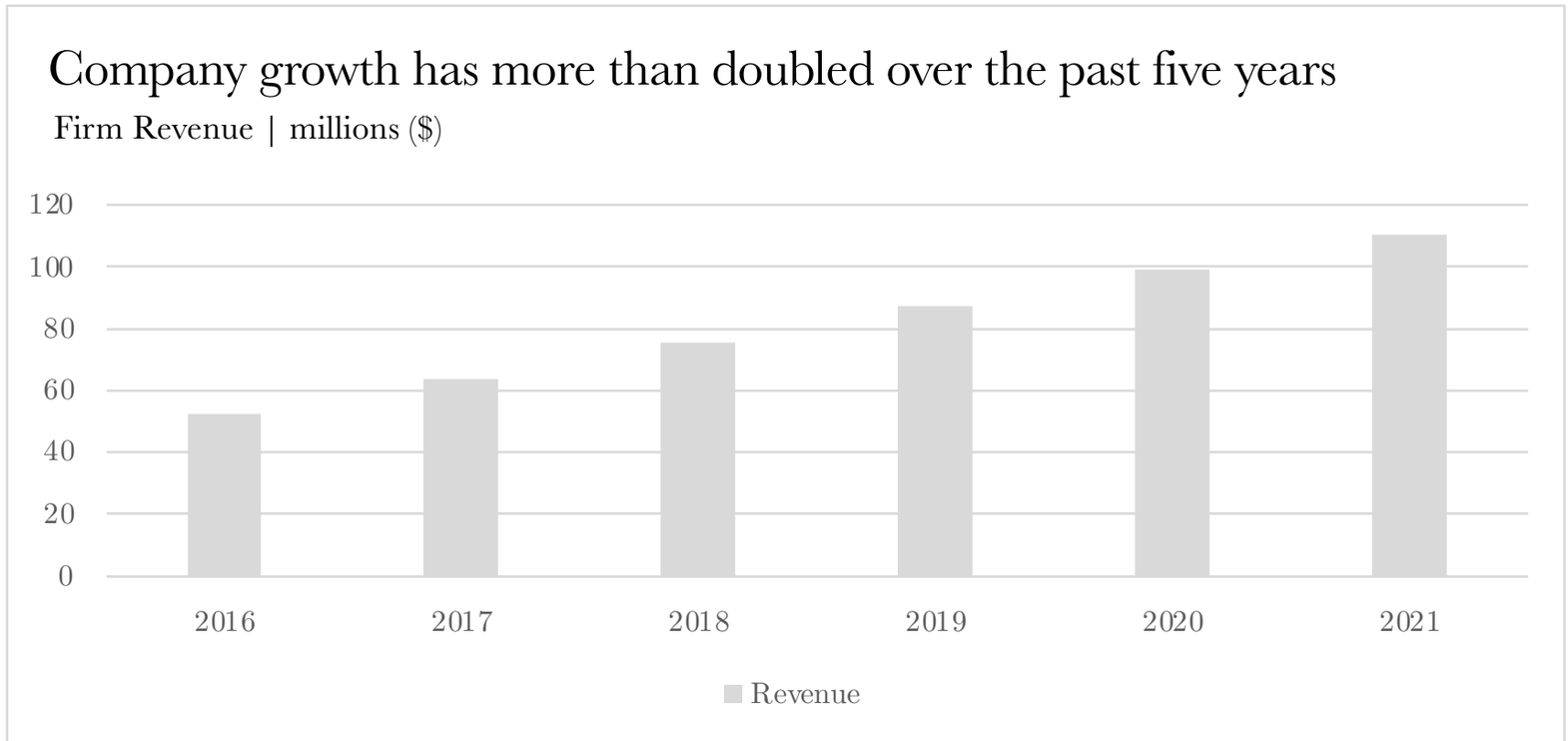
Leverage any and all tools at your disposal

Structure

Simplicity

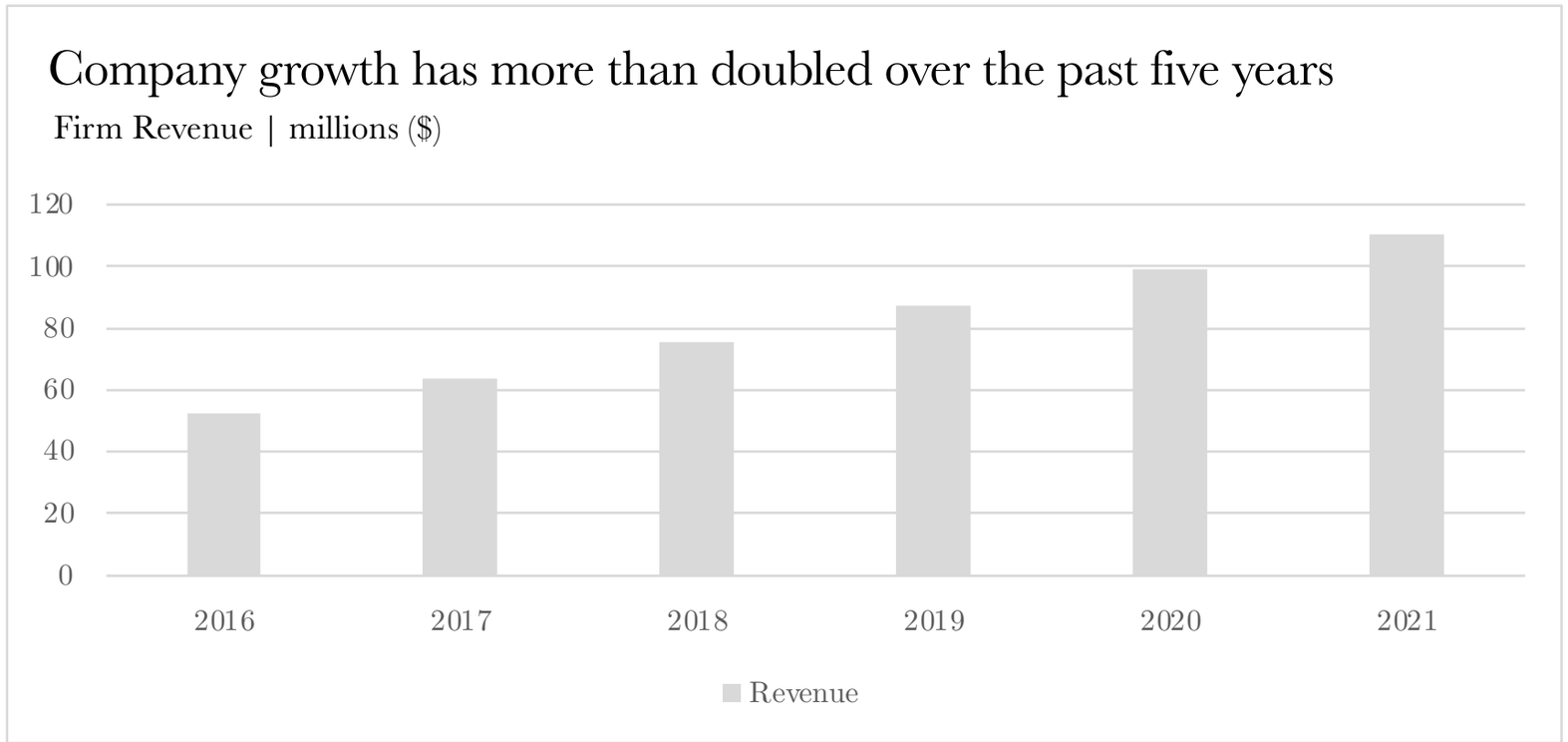
No. 3 Create

Simplicity | Start simple, start with gray (add color to articulate later)



No. 3 Create

Simplicity | Simplify to limit eye travel



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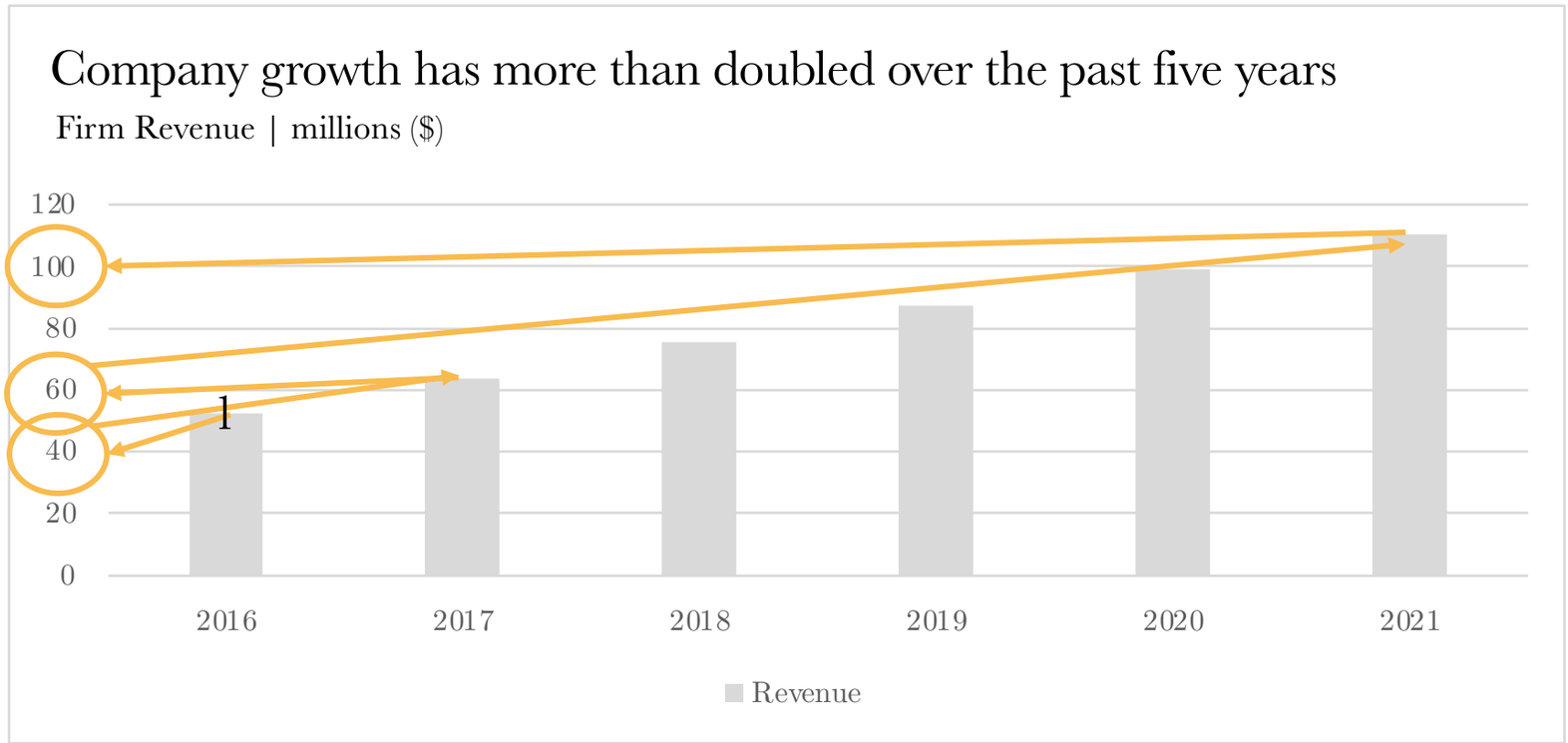

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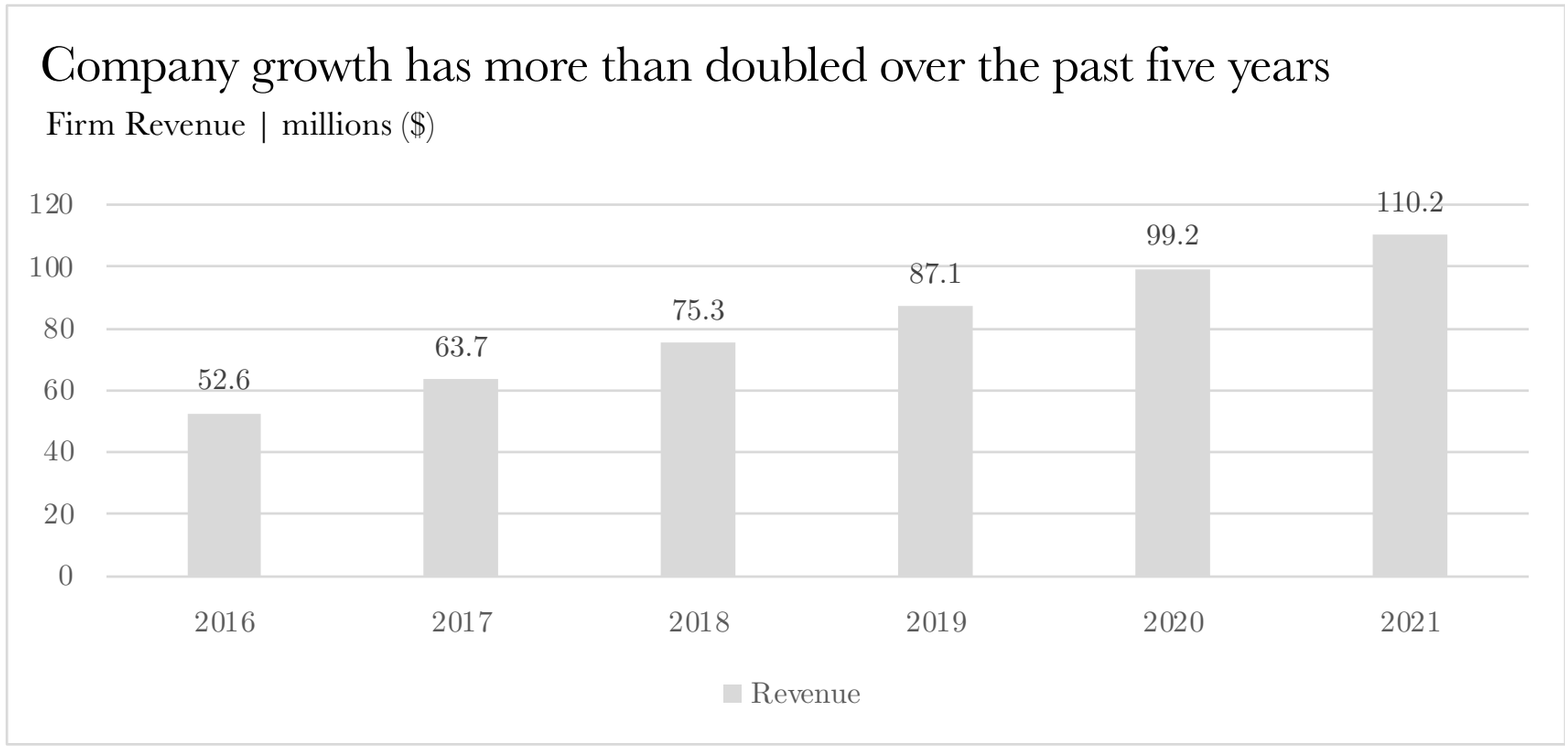
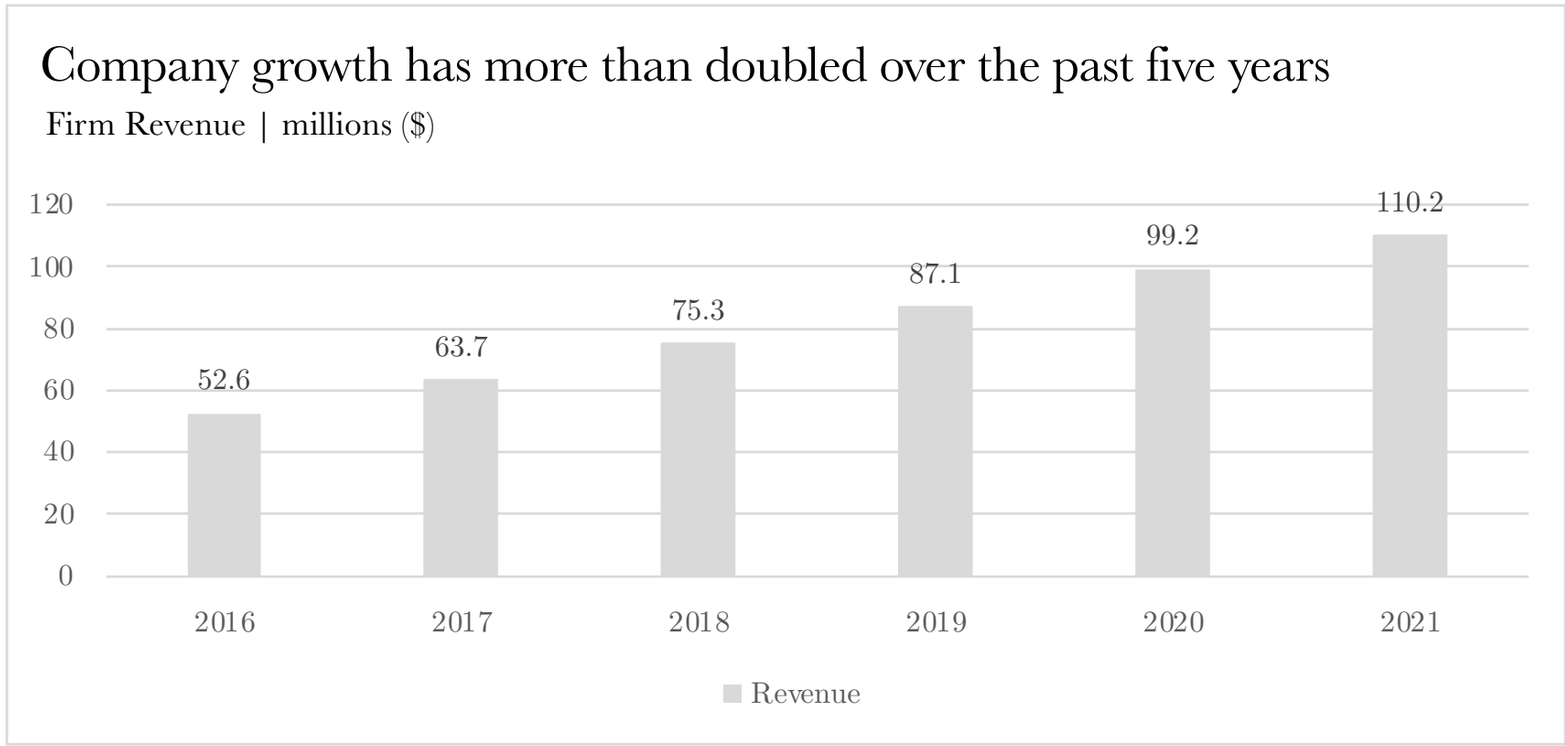


No. 3 Create

Simplicity | Everything in the visual must be necessary, remove anything extraneous or redundant | Keep it simple and clean



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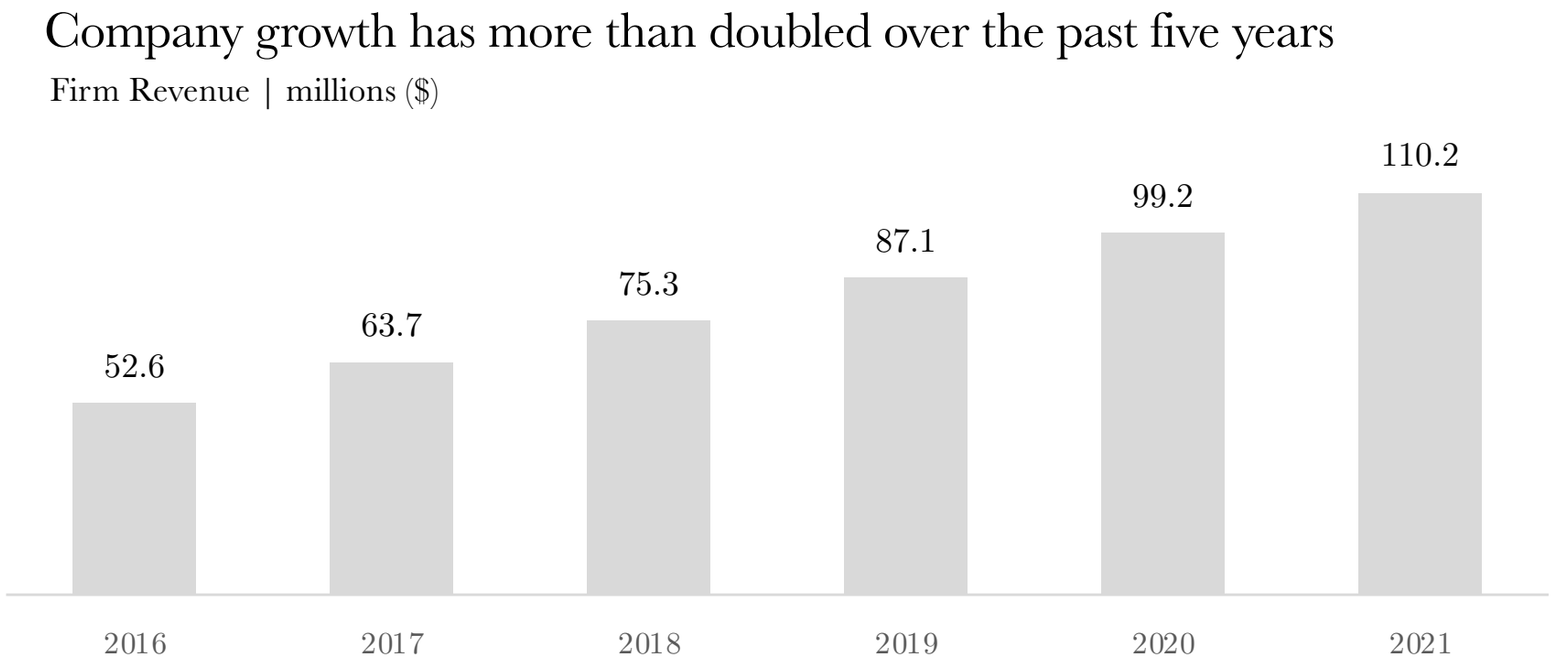


No. 3
Create

Create a digital prototype of your sketch

Leverage any and all tools at your disposal

Structure

Simplicity

Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

No.4 Case Study

No.5 Takeaways

No. 4
Articulate

Reaffirm the main idea | 5 Second Rule

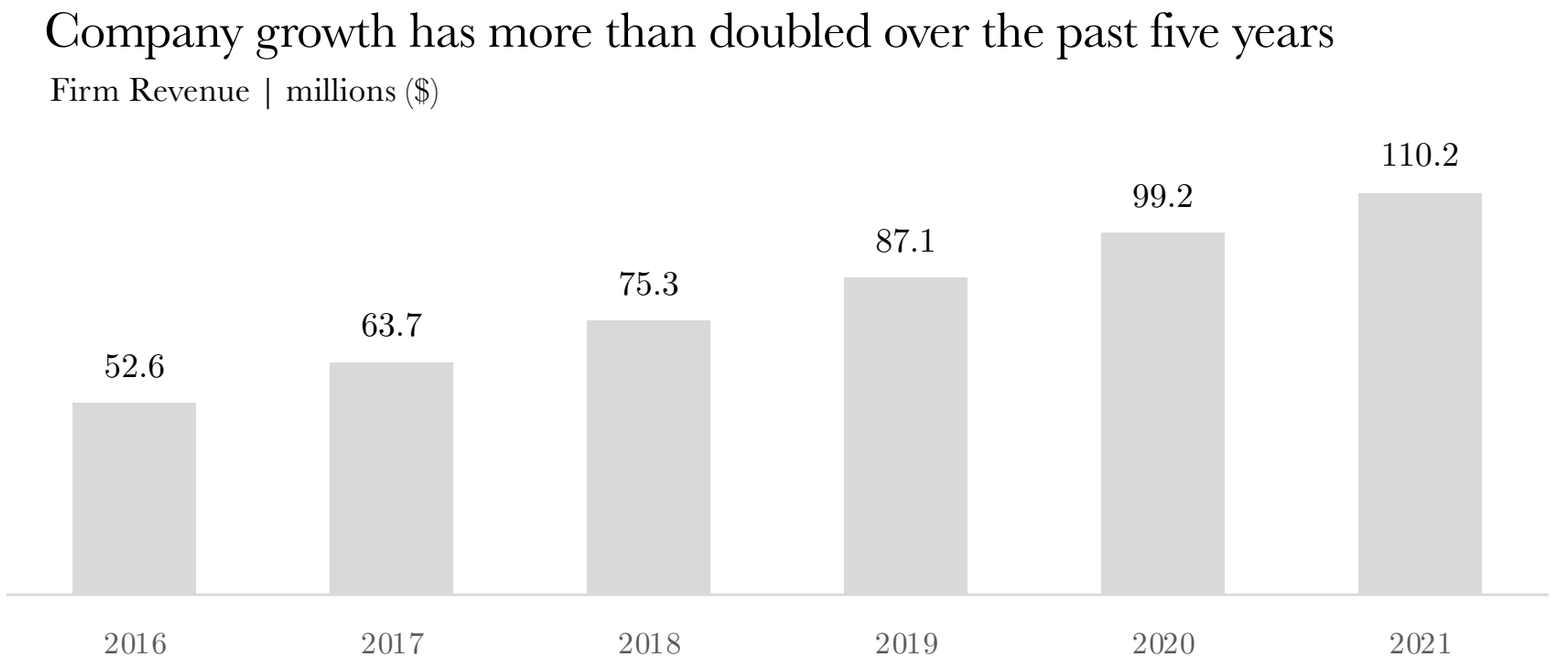
Refine for impact using the following:

Psychology + Gestalt + Preattentive Attributes

Highlight + Annotate

No. 4
Articulate

Main Idea | Clarify the main takeaway of the visual, is it obvious to the audience? Can they get it in 5 seconds?



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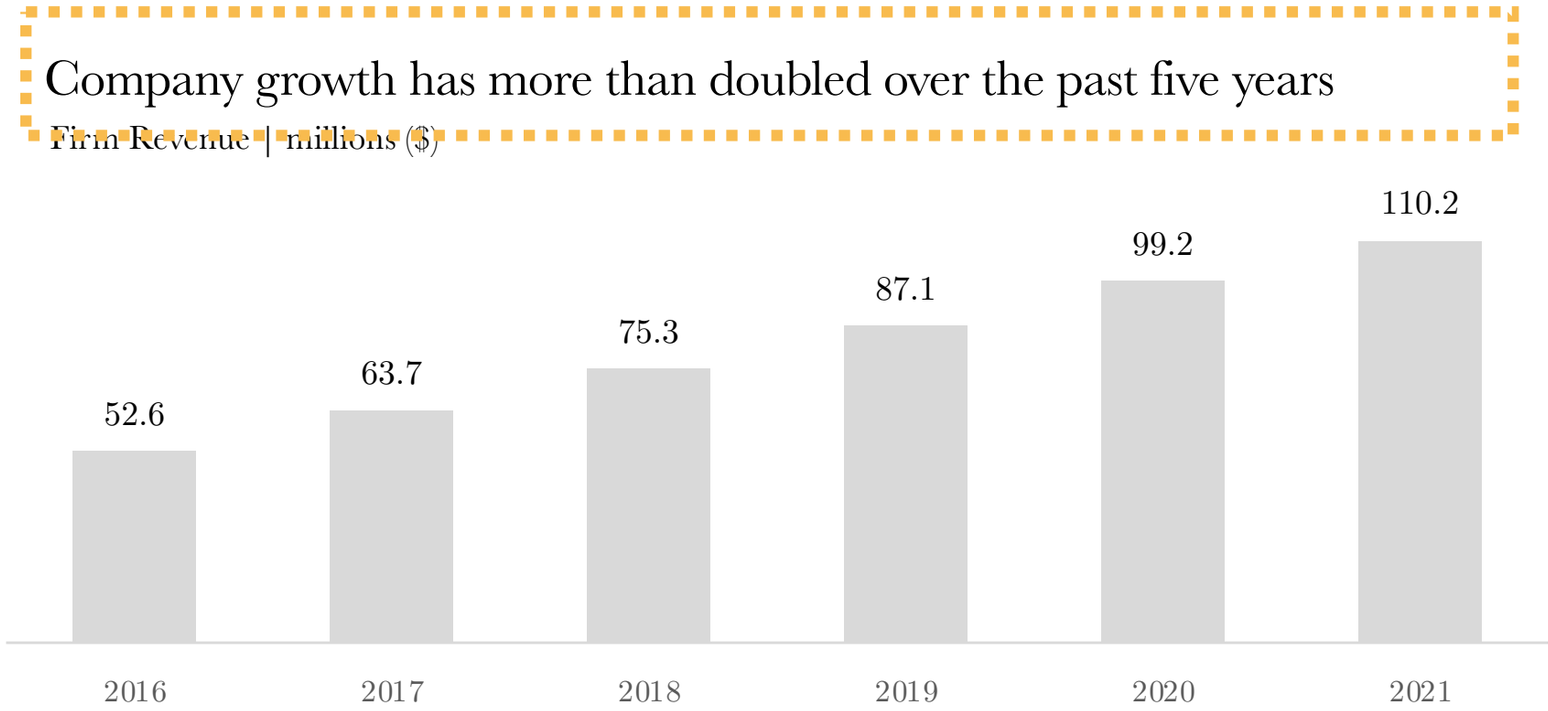
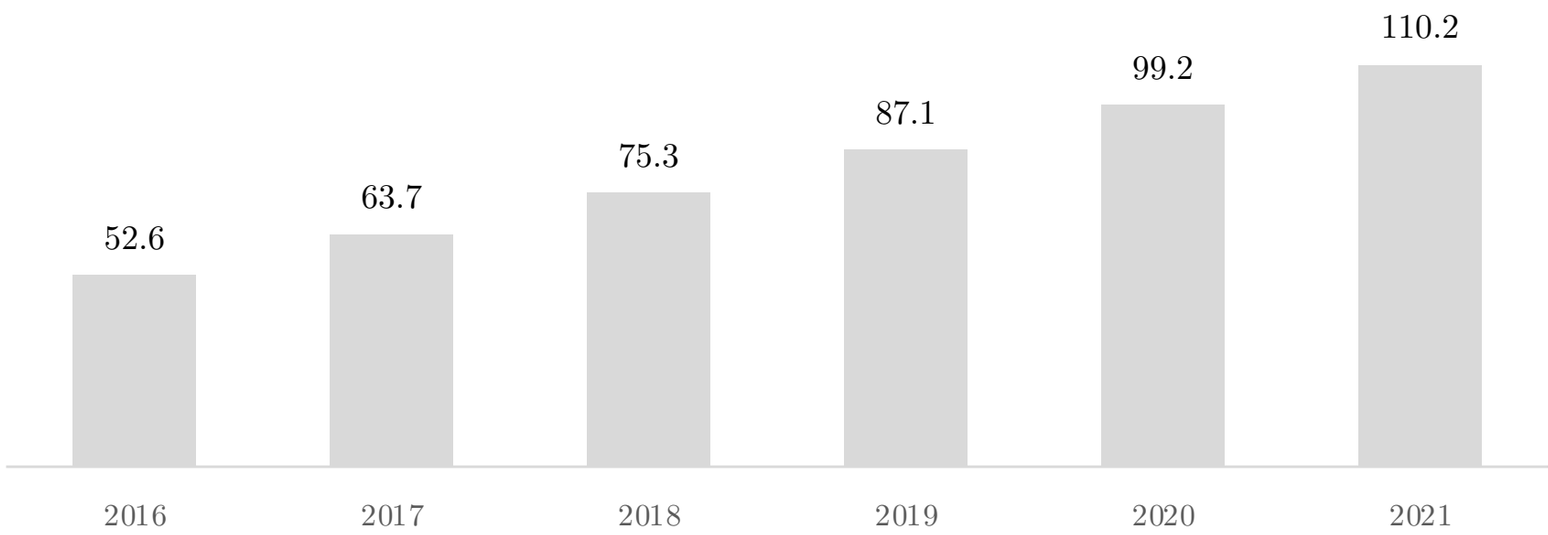


No. 4
Articulate

Refine for Impact | Leverage psychology, Gestalt, and preattentive attributes to highlight the main idea

Company growth has more than doubled over the past five years



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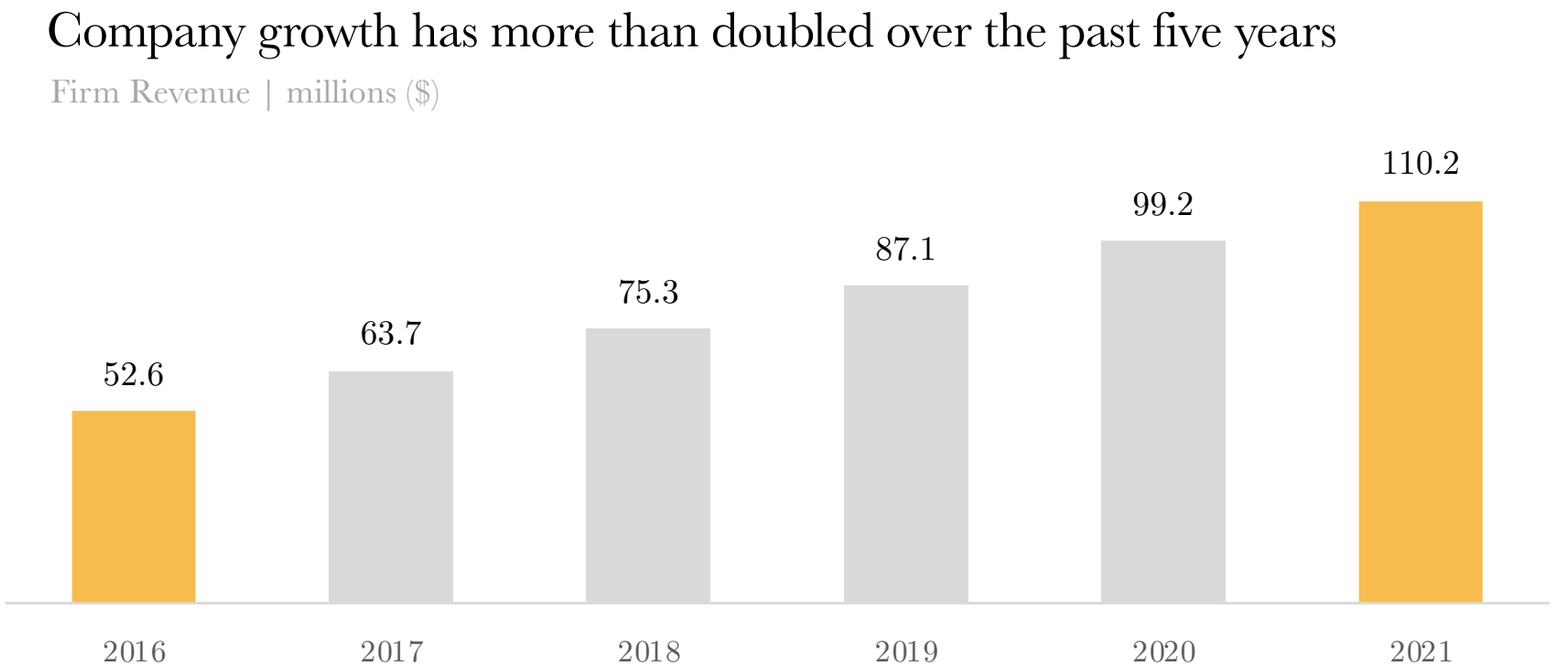
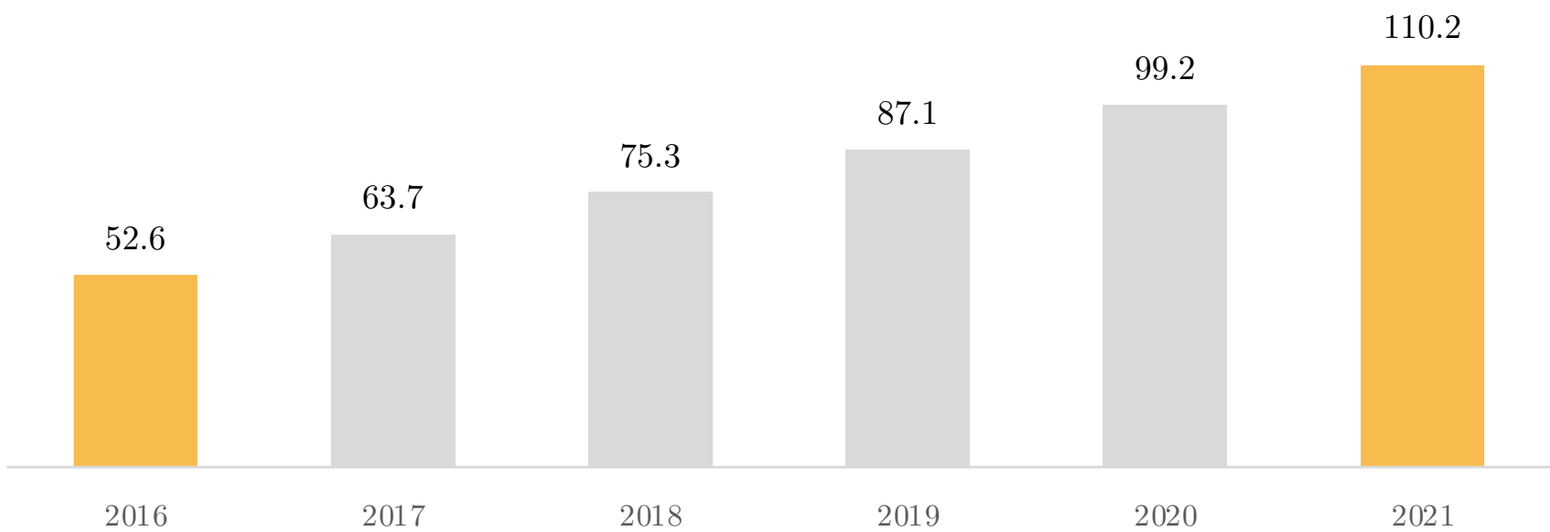


No. 4
Articulate

Refine for Impact | Use annotation and highlighting to provide context and storytelling

Company growth has more than doubled over the past five years

Firm Revenue | millions ($)



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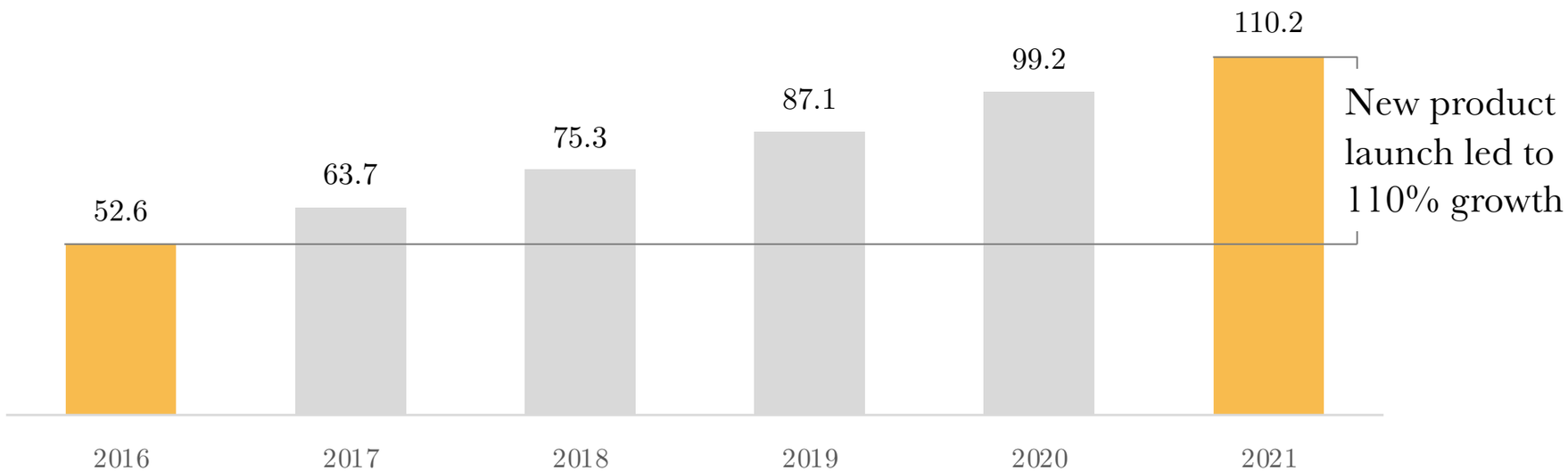


No. 4
Articulate

Reaffirm the main idea | 5 Second Rule

Refine for impact using the following:

Psychology + Gestalt + Preattentive Attributes

Highlight + Annotate

Data Visualization Process | Simplified

No. 1
Think

What's the main idea of this visual?

Who is the audience?

What is the medium of distribution?

Is this visual exploratory or declarative?

No. 2
Sketch

Explore chart type possibilities.

Be creative

Sketch

No. 3
Create

Digital prototype

Leverage tools

Structure

Simplicity

No. 4
Articulate

Main idea | 5 second rule

Refine for impact:

- Preattentive attributes
- Highlight + annotate

Crafting Impactful Data Stories:
Design Principles

No.1 Why we Visualize

No.2 Psychology + Visual Perception

No.3 Data Visualization Process

Think | Sketch | Create | Articulate

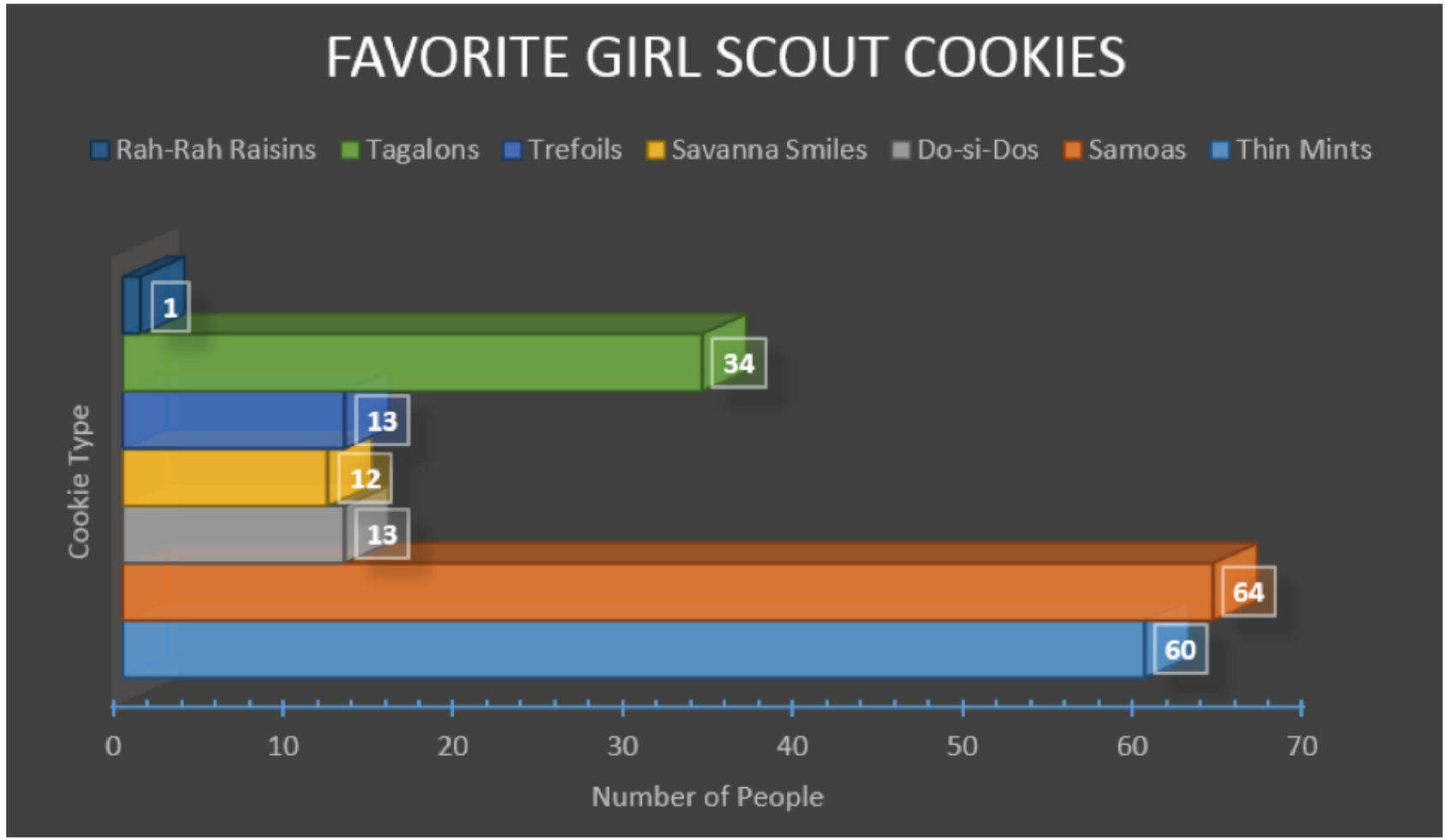
No.4 Case Study

No.5 Takeaways

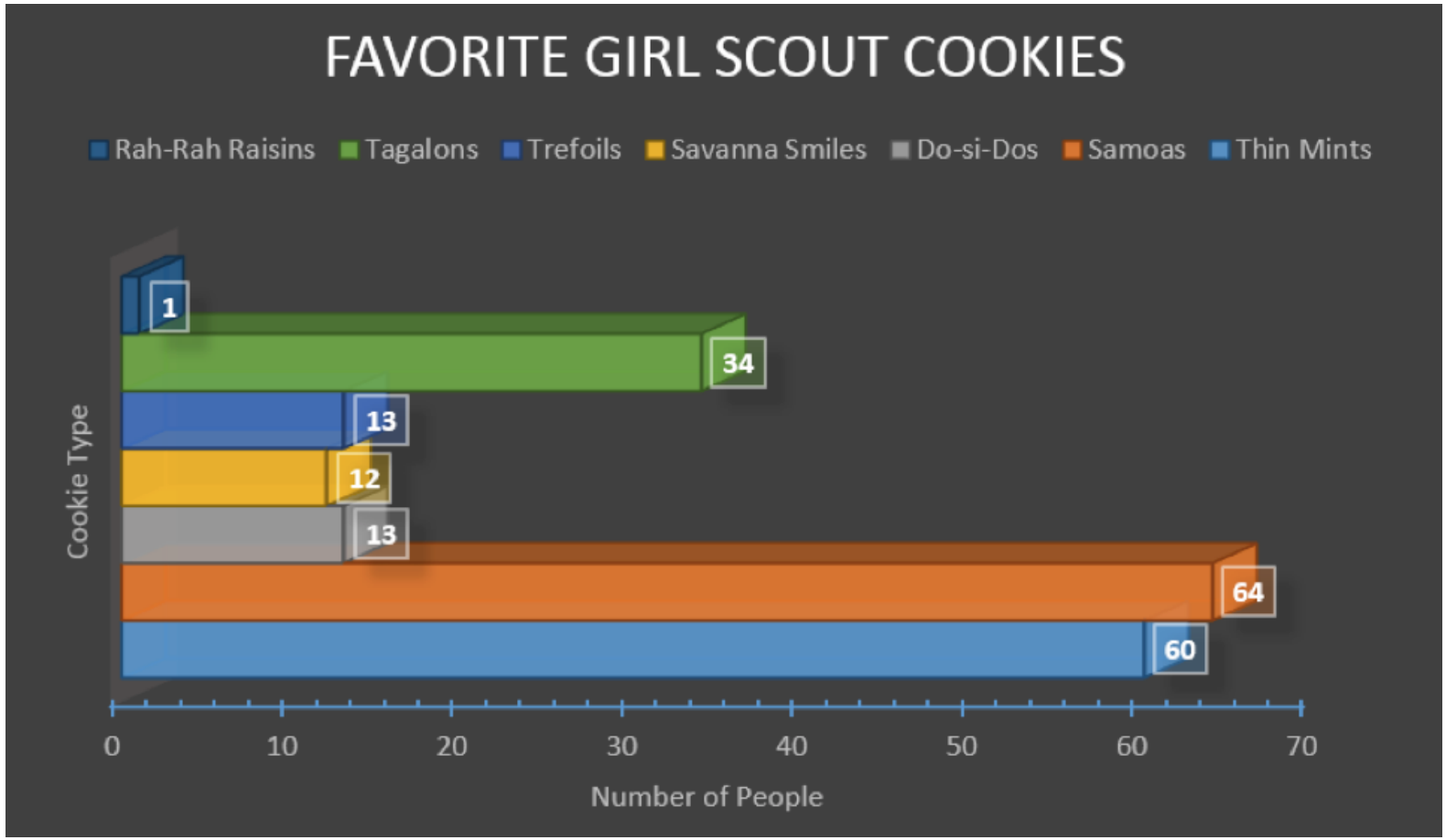
Case Study Redesign Process

1. What is your first impression of the visual? First thoughts?
2. What do you like?
3. What would you improve?
   Think in terms of chart type, structure, simplicity, capturing the main idea, refining for impact (preattentive attributes, annotation, highlighting, etc.).
4. Sketch potential redesigns of the visual and determine the “best” alternative visualization

Mini Case Study | Practice



Mini Case Study | Practice



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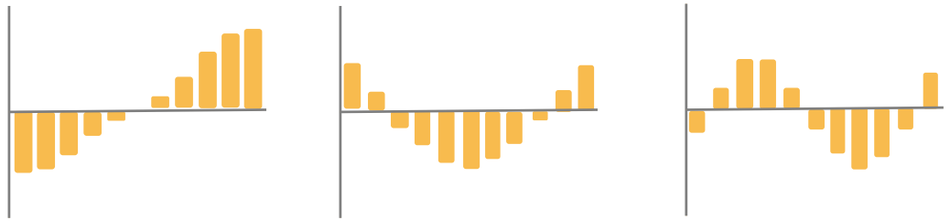
Takeaways

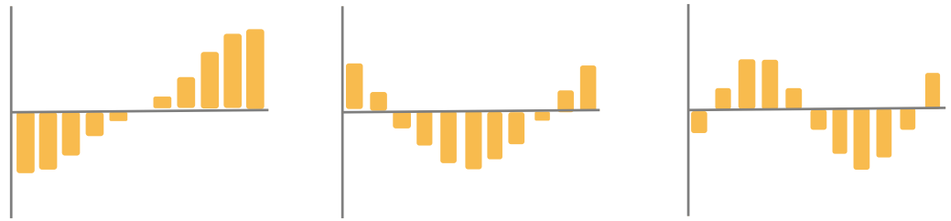


1 Good visualization involves a process
Think | Sketch | Create | Articulate

2 Impactful data stories & visuals take into account:
psychology, visual perception, types of charts, structure,
simplicity, + refining for impact

3 Data visualization skills are best developed through
critiquing + redesigning using mini-case studies

Takeaways



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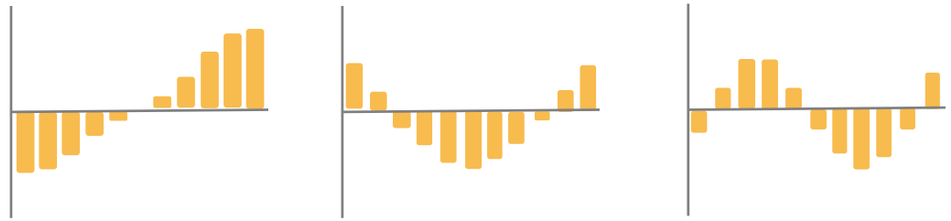

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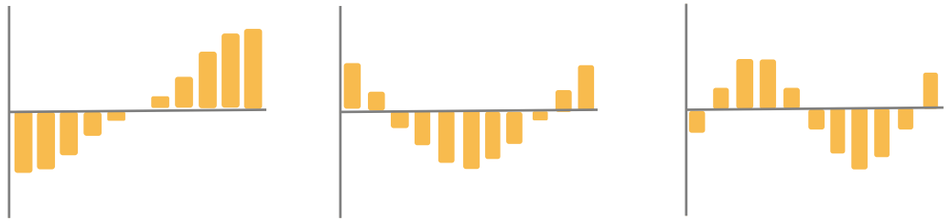

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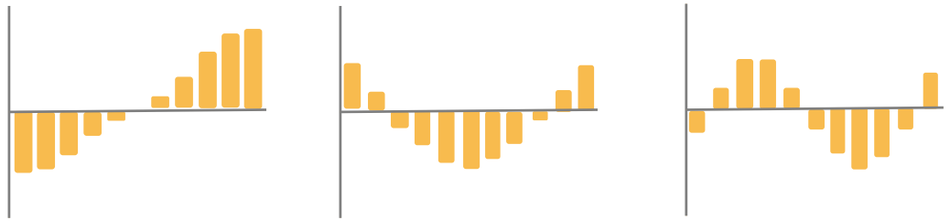

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Data Visualization:

Design Principles
Exploration + Conception
Storytelling

Agenda

Data Visualization Design Principles

Chart Types + EDA

Break

Storytelling

Takeaways

Chart Types | A Selection Framework

No. 1 | Think

No. 2 | Sketch

No. 3 | Create

No. 4 | Articulate

Chart Types | A Selection Framework

No. 1 | Think

No. 2 | Sketch

No. 3 | Create

No. 4 | Articulate

Chart Type Exploration

Chart type selection and exploration should take place in the conceive stage during the sketch phase

Types of Charts

Selection Framework

Chart Types

Comparison
Composition
Distribution
Relationship
Time
Spatial

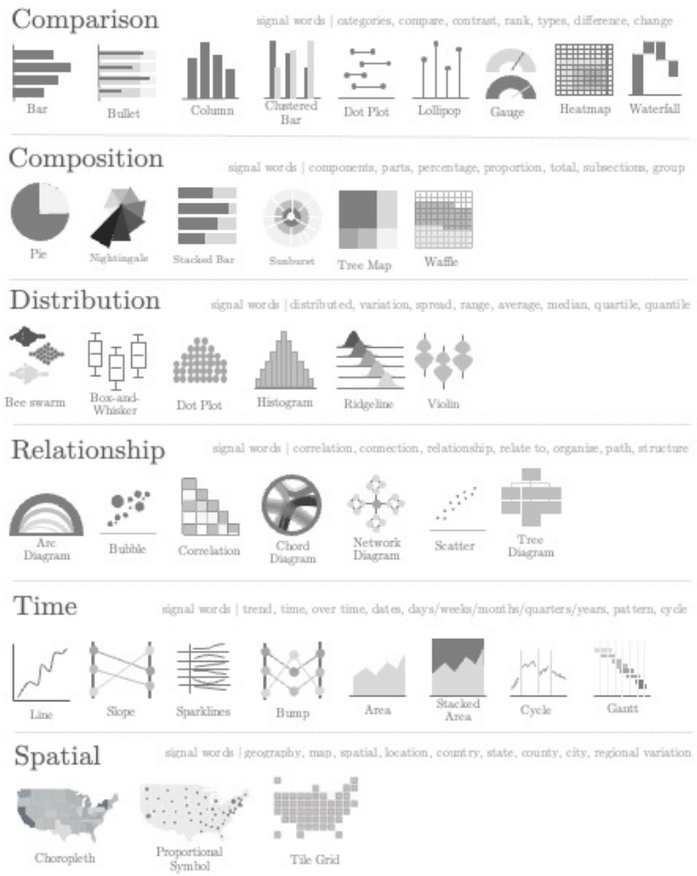

Chart Types | A Selection Framework

State the goal

In one sentence state the goal or objective of your visual.

Look for key words or signal words to guide chart type selection

“ I want to compare the difference between…

“ I want to show...over time…

“ I want to explore the percentage of the total

Adapted from Good Charts by Berinato

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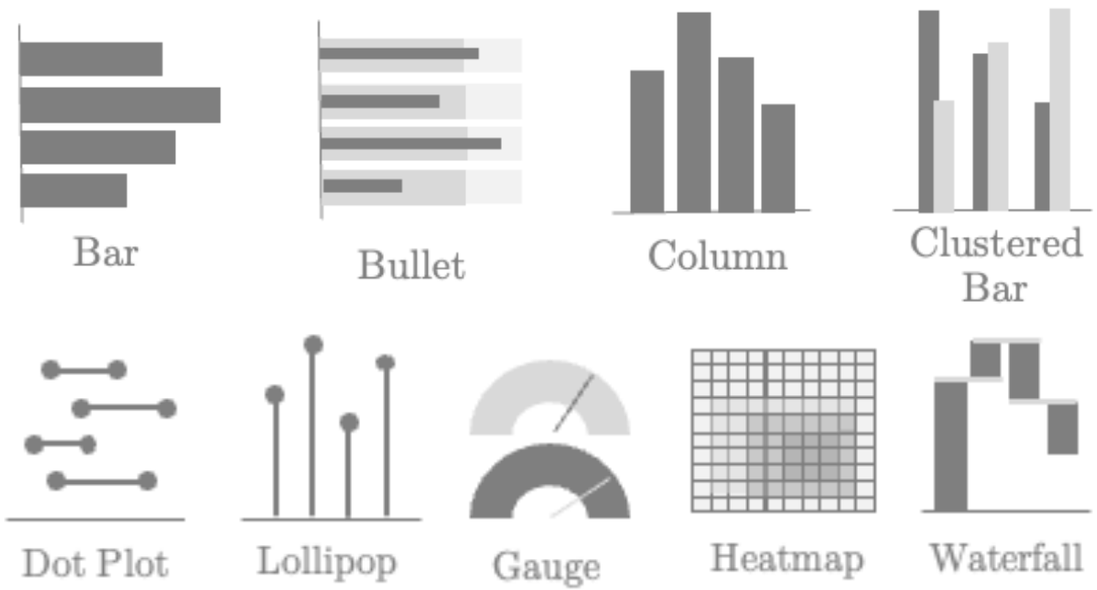
Adapted from Good Charts by Berinato

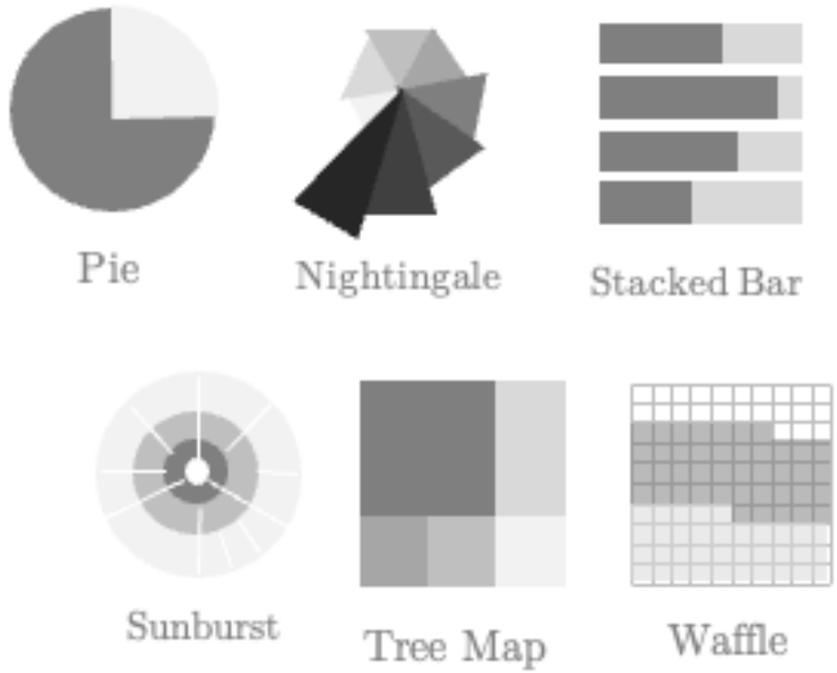
Chart Types | Comparison



signal words

categories
compare
contrast
rank
types
difference
change

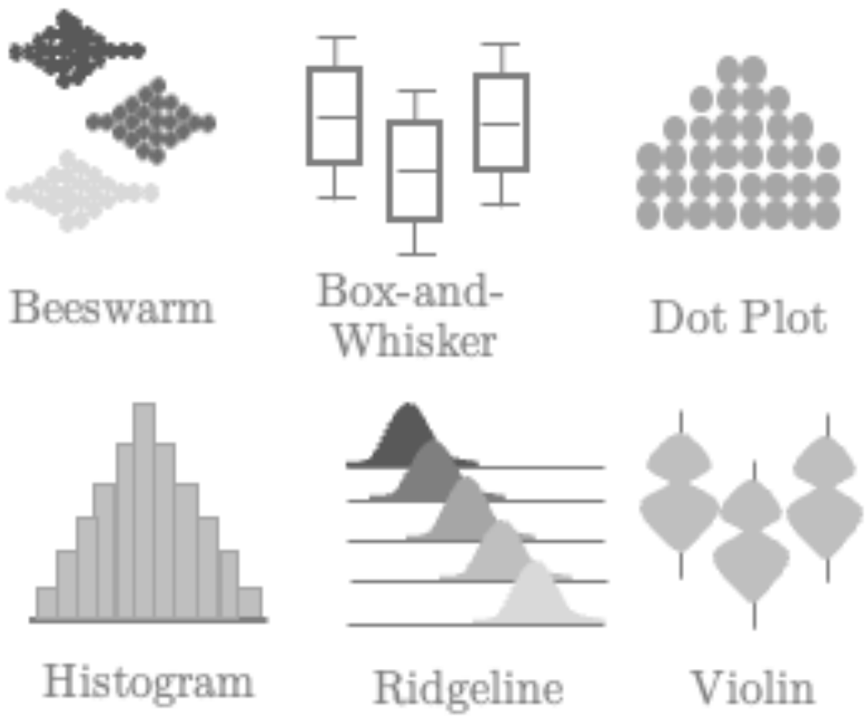
Chart Types | Composition



signal words

components
parts
percentage
proportion
total
subsections
group

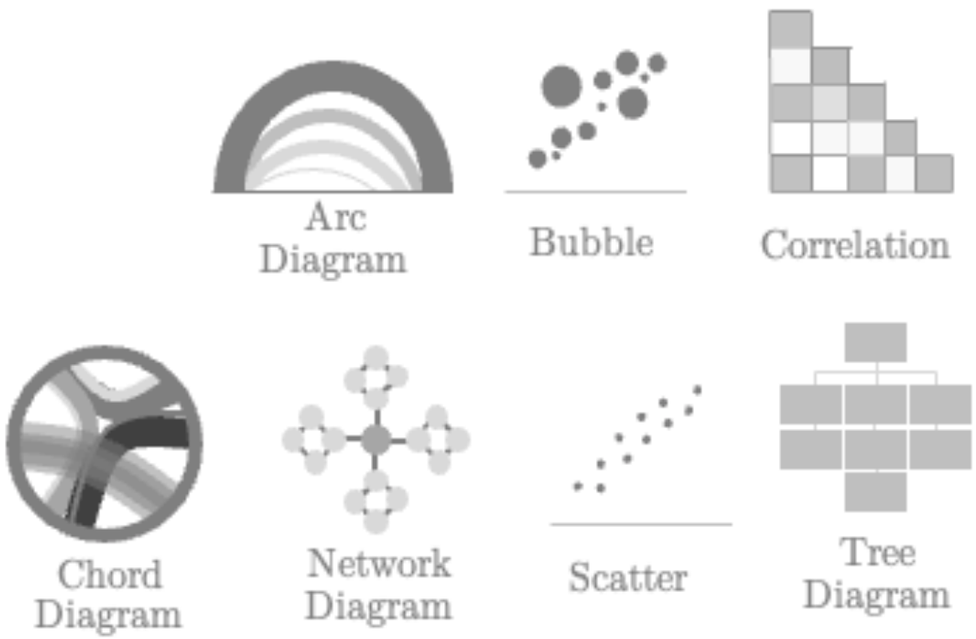
Chart Types | Distribution



signal words

distributed
variation
spread
range
average
median
quartile
quantile

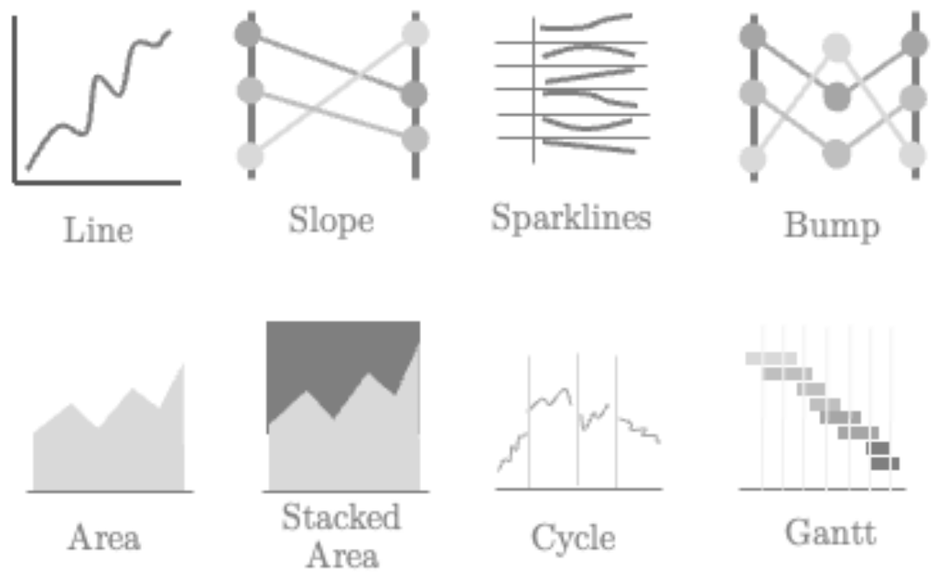
Chart Types | Relationship



signal words

correlation
connection
relationship
relate to
organize
path
structure

Chart Types | Time



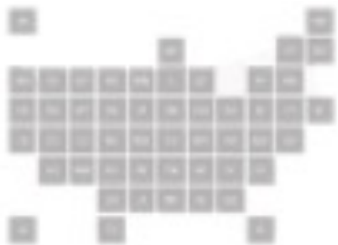
signal words

trend
time
over time
dates
days
weeks
months
quarters
years
pattern
cycle

Chart Types | Spatial

Choropleth

Proportional Symbol



Tile Grid

signal words

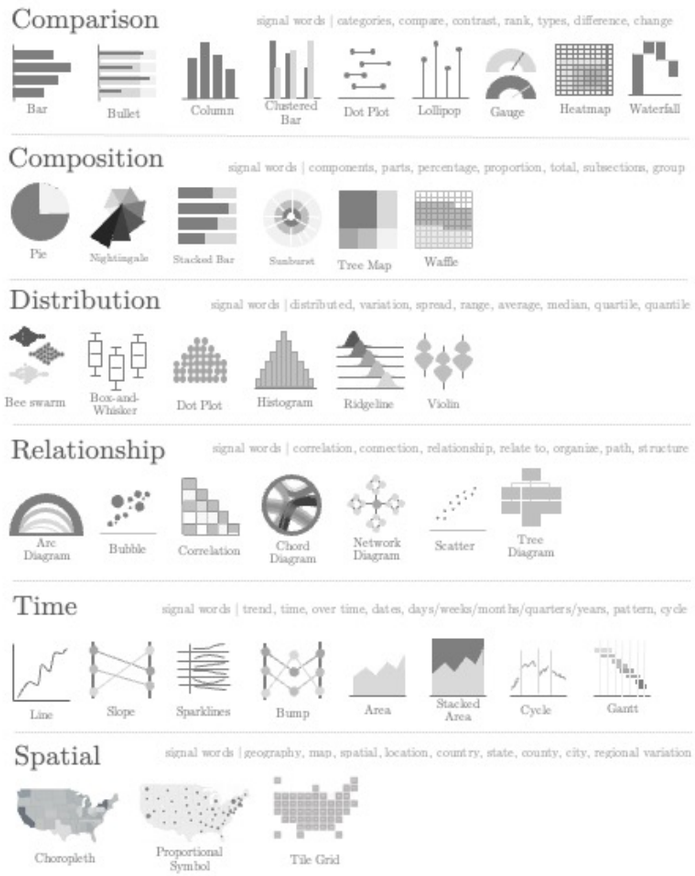
geography
map
spatial
location
country
state
county
city
regional variation

Types of Charts

Selection Framework

Chart Types

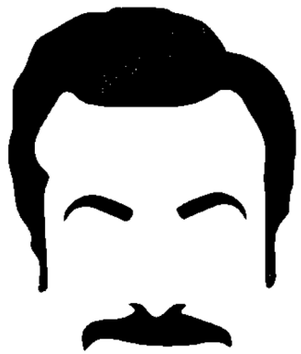
Comparison
Composition
Distribution
Relationship
Time
Spatial



Exploratory Data Visualization via Chart Type Selection

Exploratory Data Visualization via Chart Type Selection

Ted Lasso Approach to EDA

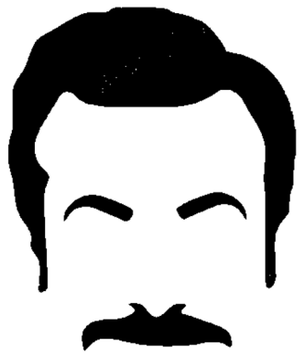


Be curious,
not judgmental

- Ted Lasso via Walt Whitman

Exploratory Data Visualization via Chart Type Selection

Ted Lasso Approach to EDA



Be curious, not judgmental

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1. Use the chart type framework categories as a basis to generate questions about the data
2. Explore potential visuals via sketching and prototyping
3. Select a visual and story that aligns with objectives and refine

Exploratory Data Visualization

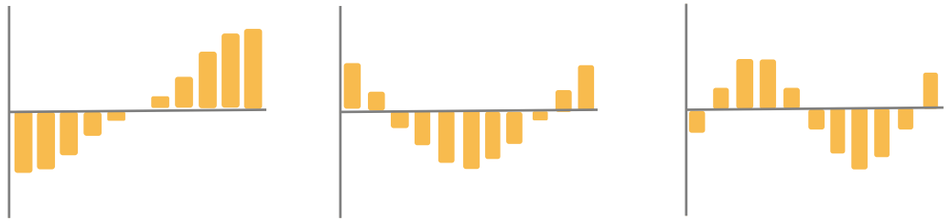
via Chart Type Selection Practice

* Using this dataset, brainstorm three questions/goal statements along with three potential sketched visuals for exploration

Tesla Quarterly Vehicle Deliveries by Type

Deliveries	Tesla Model 3	Tesla Model Y	Tesla Model S	Tesla Model X	Total
Q2 2016	0	0	9764	4638	14402
Q3 2016	0	0	16047	8774	24821
Q4 2016	0	0	12700	9500	22200
Q1 2017	0	0	13481	11570	25051
Q2 2017	0	0	12010	10010	22020
Q3 2017	220	0	14065	11865	26150
Q4 2017	1550	0	15200	13120	29870
Q1 2018	8180	0	11730	10070	29980
Q2 2018	18440	0	10930	11370	40740
Q3 2018	55840	0	14470	13190	83500
Q4 2018	63150	0	13500	14050	90700
Q1 2019	50900	0	6000	6100	63000
Q2 2019	77634	0	8422	9300	95356
Q3 2019	79703	0	8383	9100	97186
Q4 2019	92620	0	8375	11100	112095
Q1 2020	73975	2291	4525	7705	88496
Q2 2020	63793	16484	3927	6687	90891
Q3 2020	94049	30269	4583	10693	139594
Q4 2020	126624	35123	6060	12860	180667
Q1 2021	115077	67780	1010	1010	184877
Q2 2021	110054	89360	890	1000	201304
Q3 2021	111225	120800	9000	275	241300
Q4 2021	140000	156850	4050	7700	308600
Q1 2022	129764	165560	7362	7362	310048

Takeaways



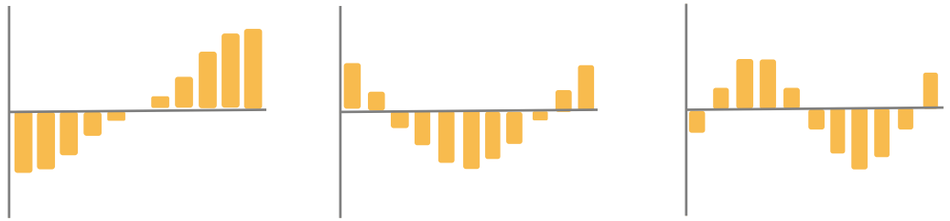
1 Good visualization involves a process
Think | Sketch | Create | Articulate

2 Impactful data stories & visuals take into account:
psychology, visual perception, types of charts, structure,
simplicity, + refining for impact

3 Data visualization skills are best developed through
critiquing + redesigning using mini-case studies

4 Be curious…use potential chart types and selection process
to spur creativity and exploration of data

Takeaways



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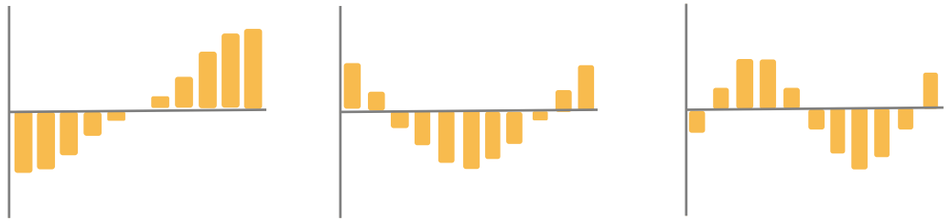

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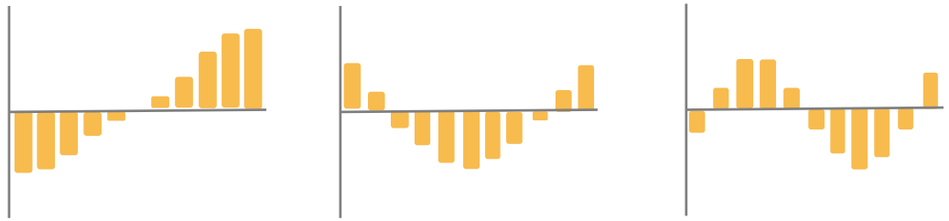

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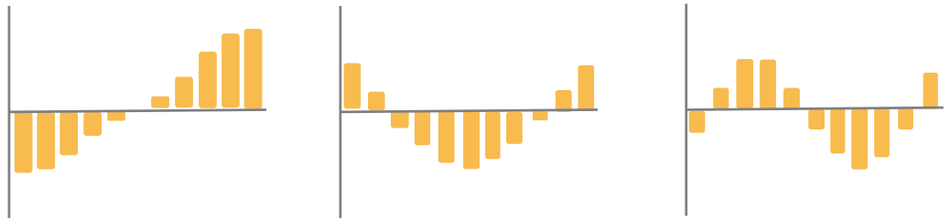

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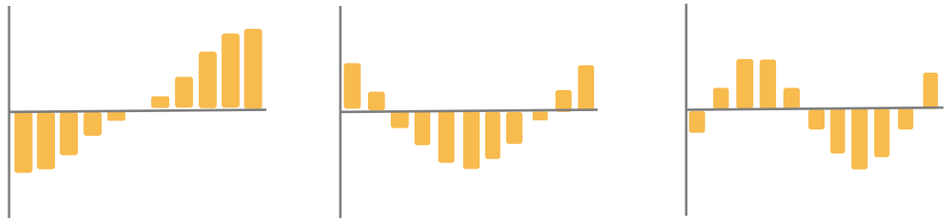

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Crafting Impactful Data Stories:

Design Principles
Exploration + Conception
Storytelling

Agenda

Data Visualization Design Principles

Chart Types + EDA

Break

Storytelling

Takeaways

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Overview

No. 1 Starting Premise

No. 2 The Power of Stories

No. 3 Stories + Data

No. 4 Strategies for Storytelling

No. 5 Jack of all Tools

No. 6 Takeaways

Crafting Impactful Data Stories: Storytelling

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No. 1
Starting Premise

Higher Education + Interdisciplinary Shortcomings

Presenting Documents vs. Giving a Presentation

Tools Don’t Dictate Design

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Crafting Impactful Data Stories: Storytelling

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No. 6 Takeaways

March 29th, 2020

6,149,000

weekly initial unemployment claims

Power of Stories

5% Percentage of audience members that could remember a single statistic

Source: Chip Heath | Made to Stick

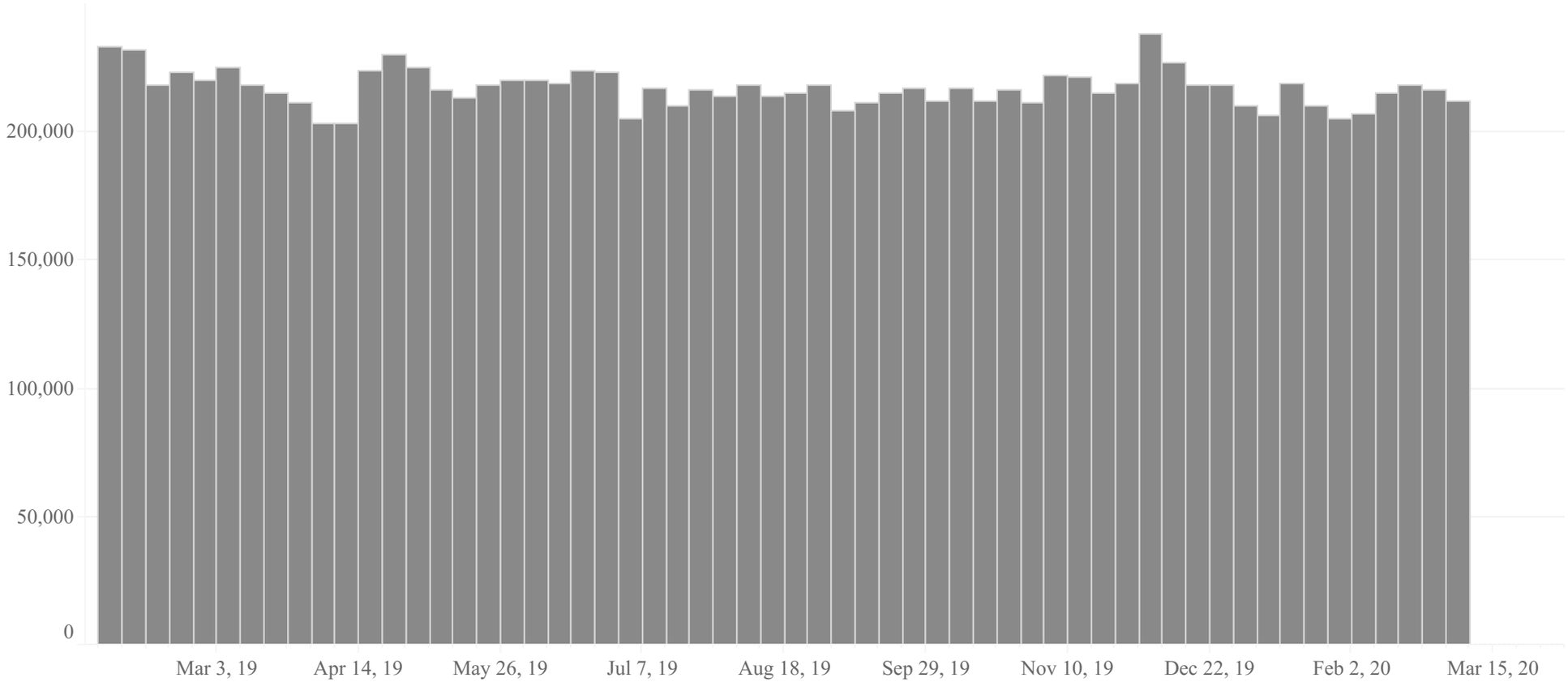
Power of Stories

5% Percentage of audience members that could remember a single statistic

63% Percentage of audience members that could remember stories

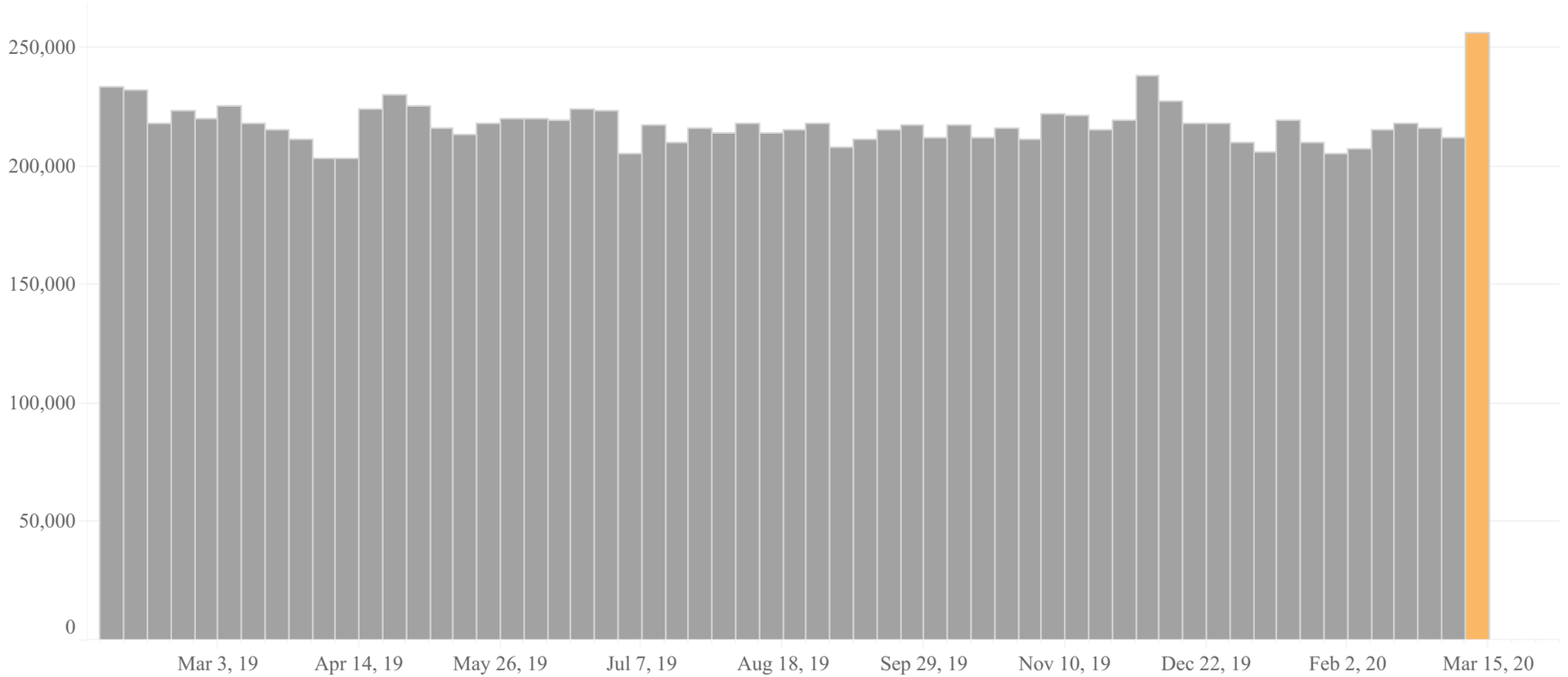
Source: Chip Heath | Made to Stick

Weekly Initial Unemployment Claims Prior to the Pandemic



Source: Bureau of Labor Statistics

Weekly Initial Unemployment Claims Slowly Rise due the Pandemic in mid-March 2020



Source: Bureau of Labor Statistics

Weekly Initial Unemployment Claims Reach Unprecedented Levels by April 2020

Source: Bureau of Labor Statistics

Crafting Impactful Data Stories: Storytelling

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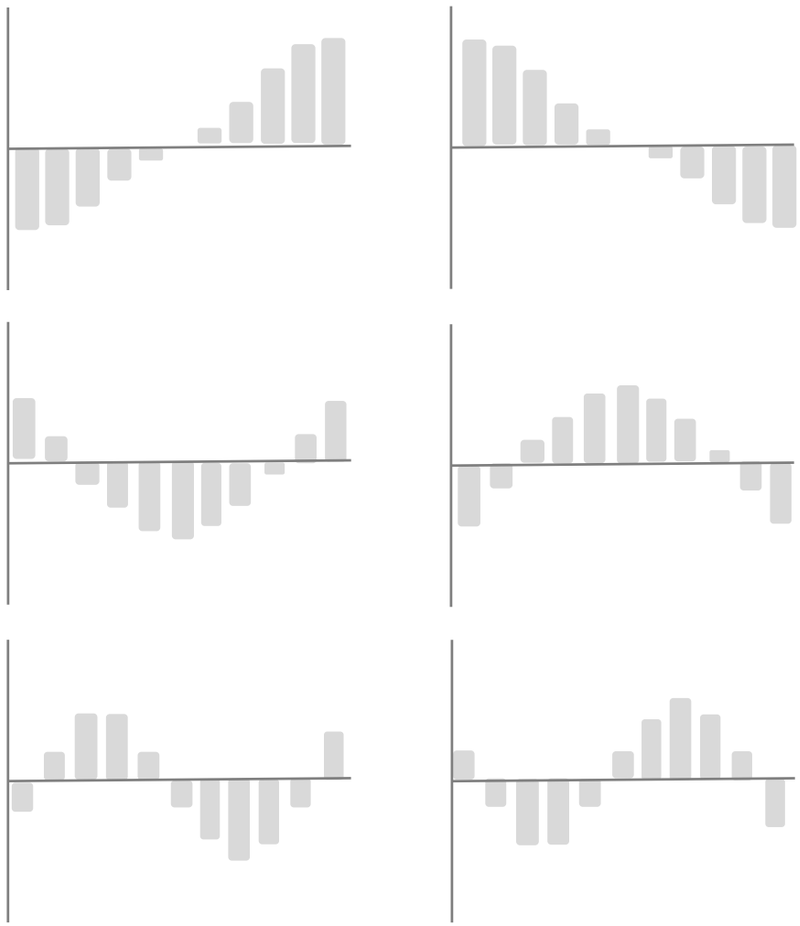
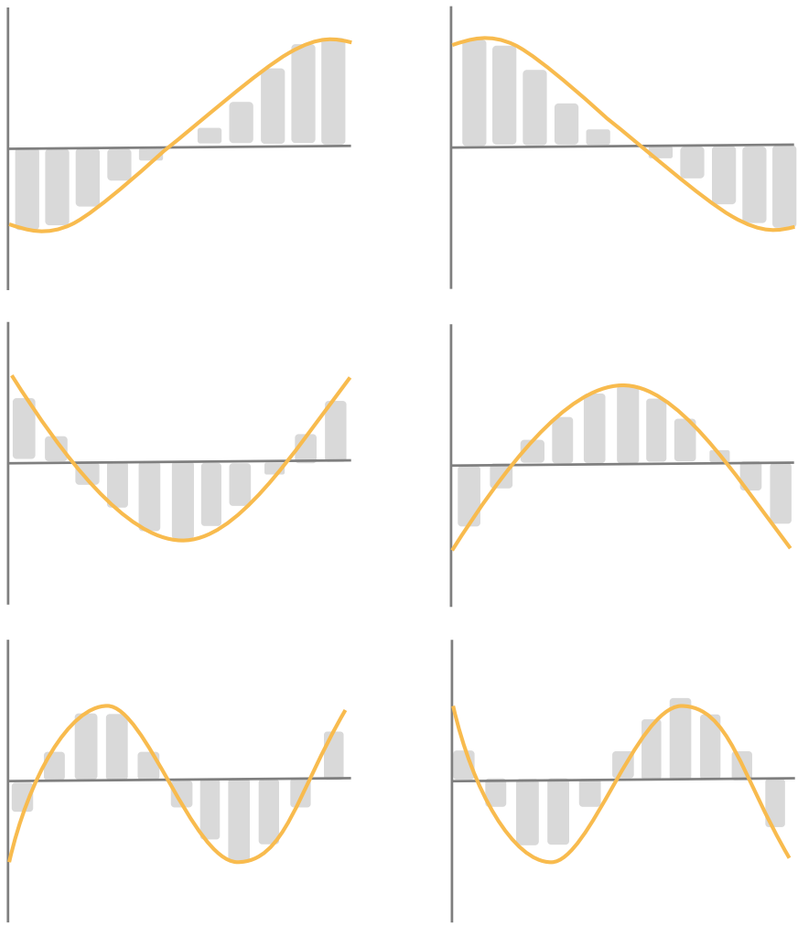
Data...



The Patterns
of Data…



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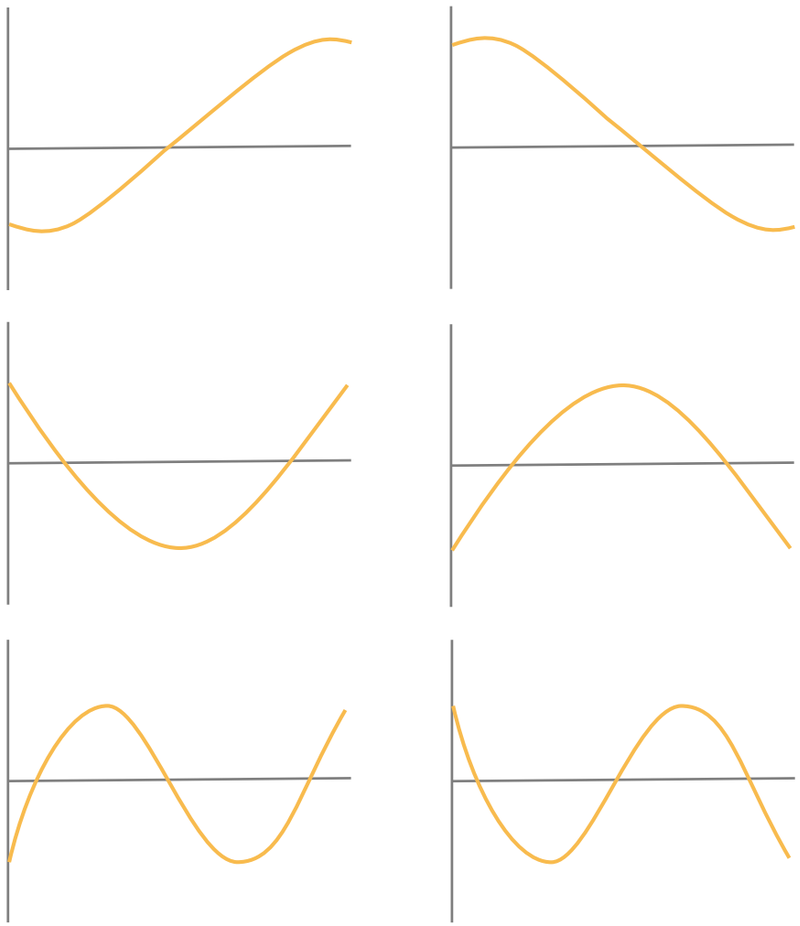
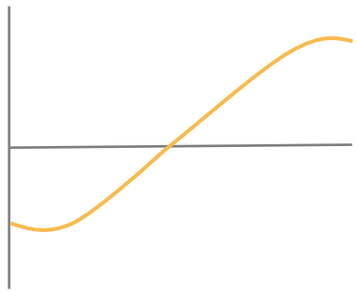


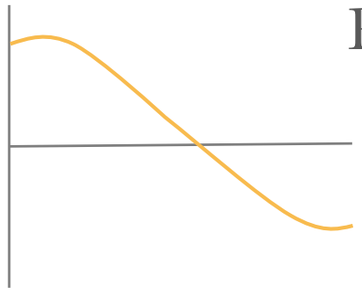
Resemble the “Arcs” of Stories.

Six Common Story Arcs

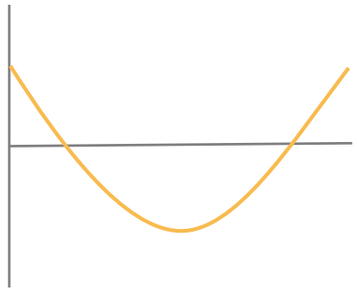
Rags to Riches
rise



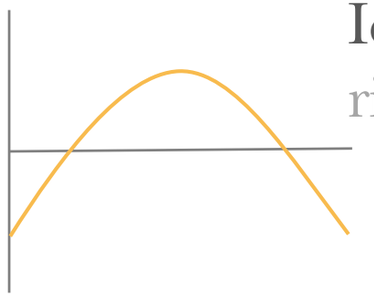
Riches to Rags fall



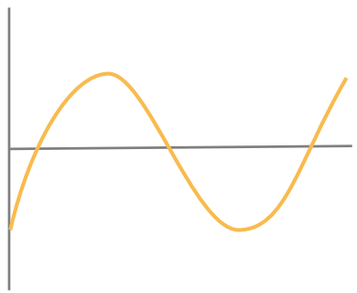
Man-in-Hole
fall-rise



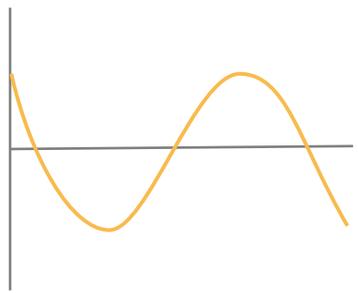
Icarus
rise-fall



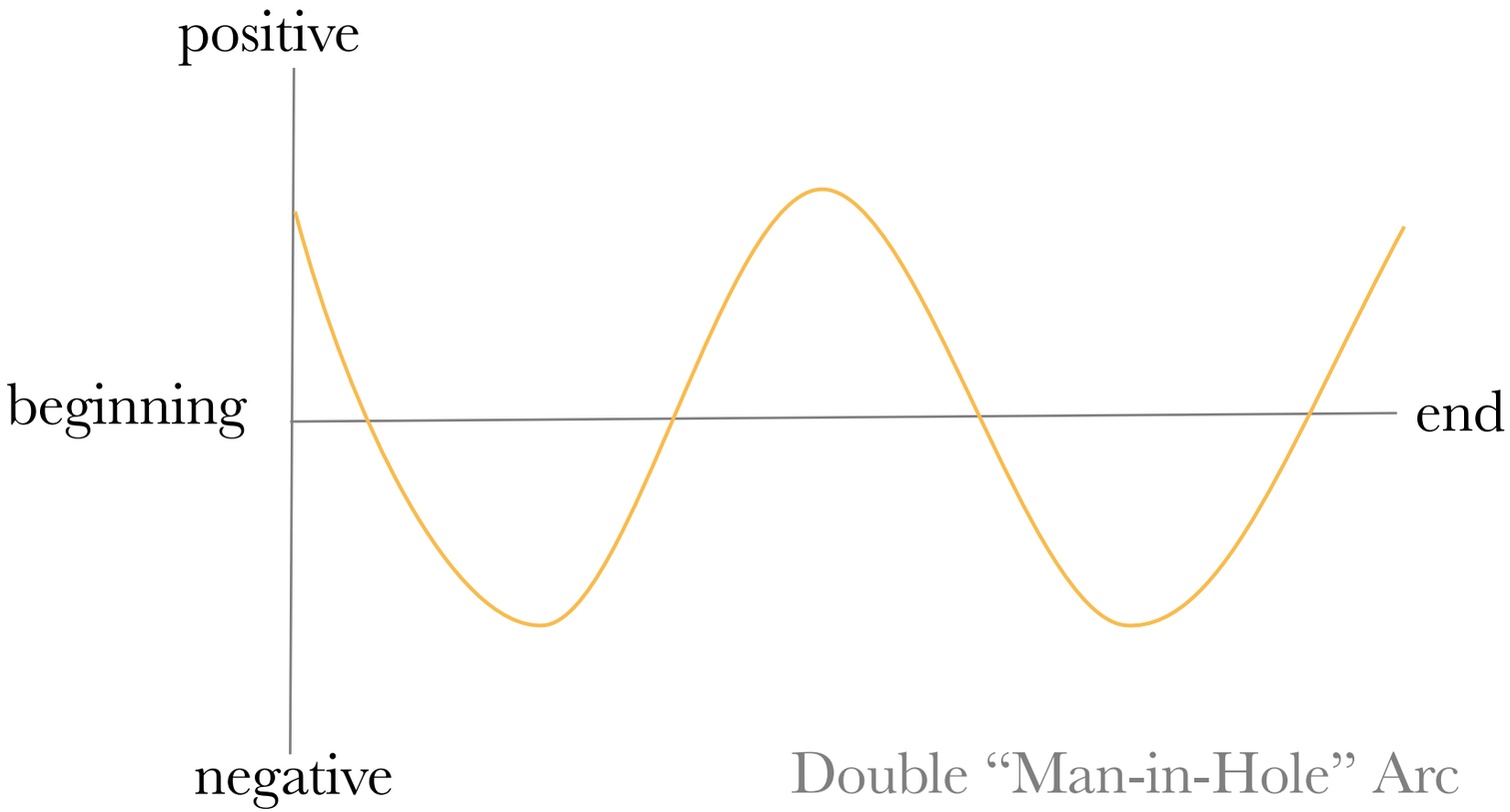
Cinderella
rise-fall-rise



Oedipus
fall-rise-fall

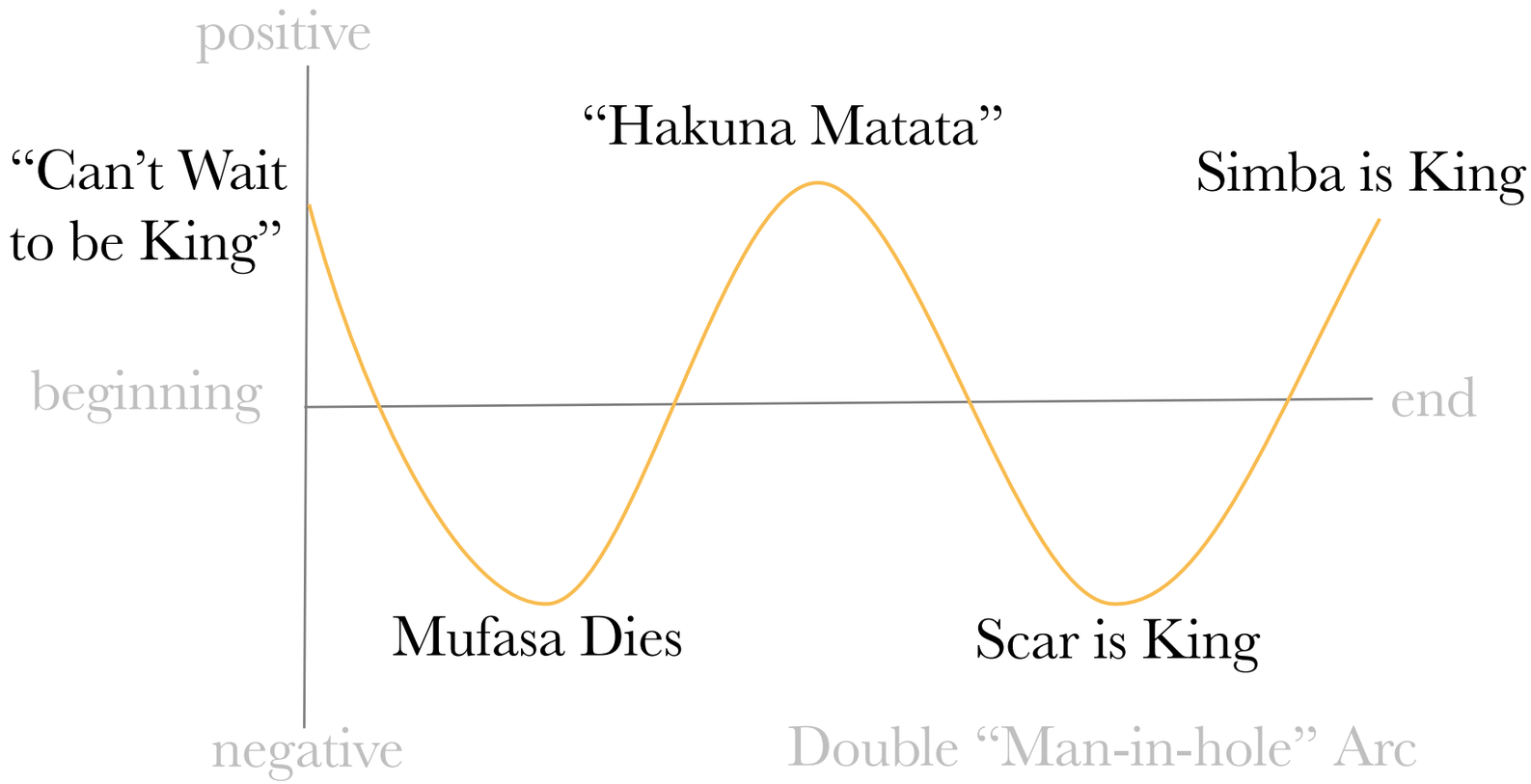


Story Arc | The Lion King



Double “Man-in-Hole” Arc

Story Arc | The Lion King



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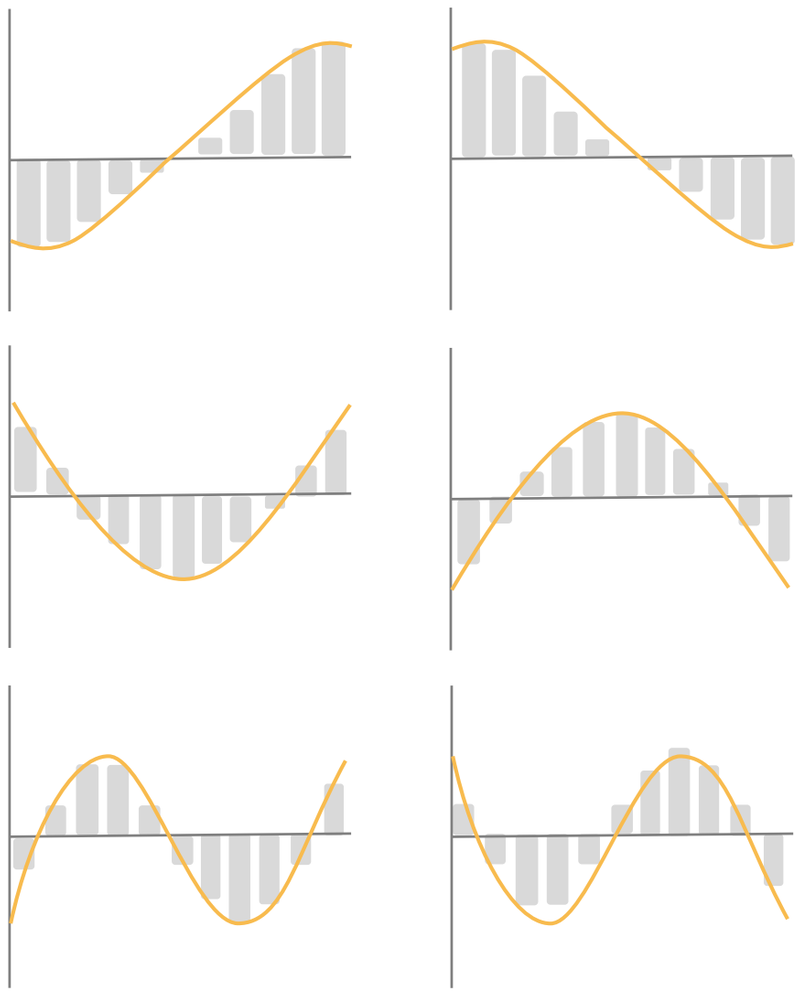


Stories + Data

1 Explore Data for Arcs

Are there patterns in your data that resemble story arcs?

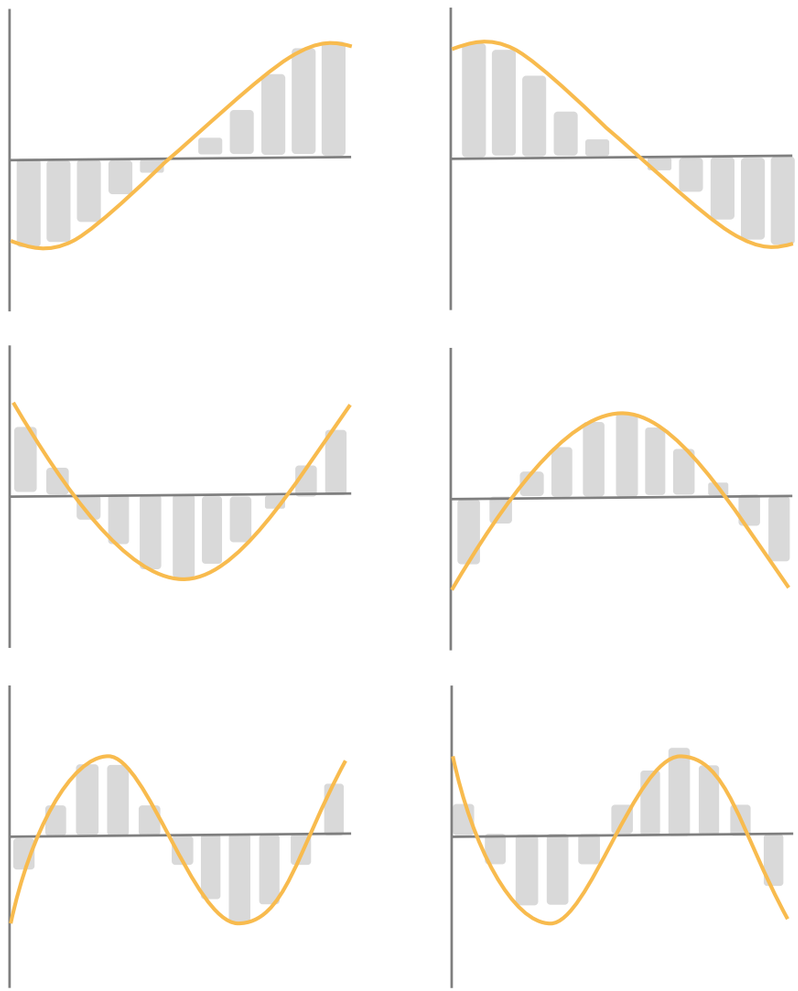
2 + Presentation Strategy

Context Storytelling

Can you display your data in stages by adding context? Zoom in or out? Highlight? Annotate?

3 Hide-n-Reveal Storytelling

Thinking in arcs, can you build up to the punchline? Hide data with sudden reveal?



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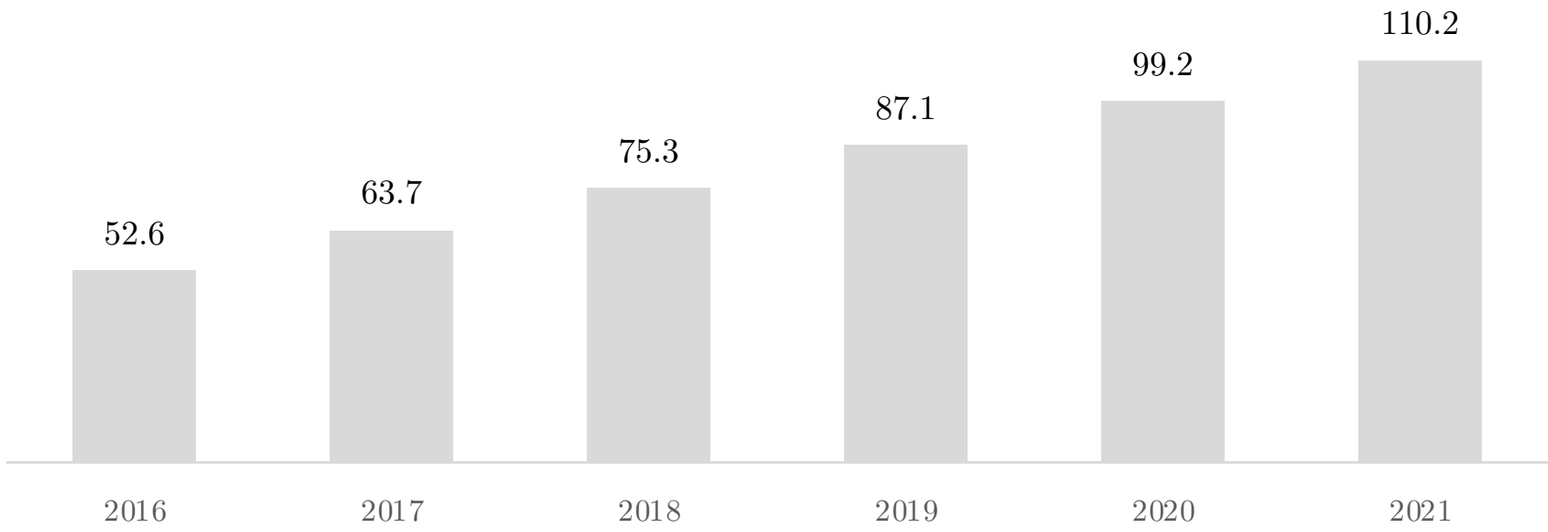
Context

Storytelling

Company growth has more than doubled over the past five years

Firm Revenue | millions ($)



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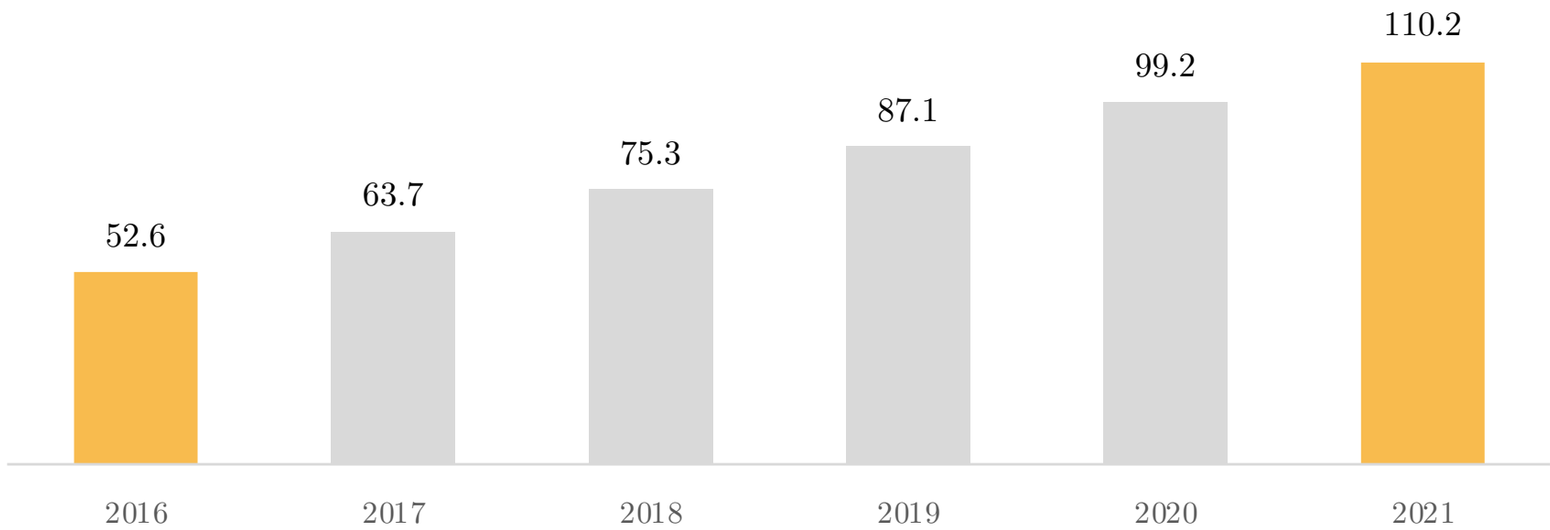

Context

Storytelling

Rags to Riches
rise

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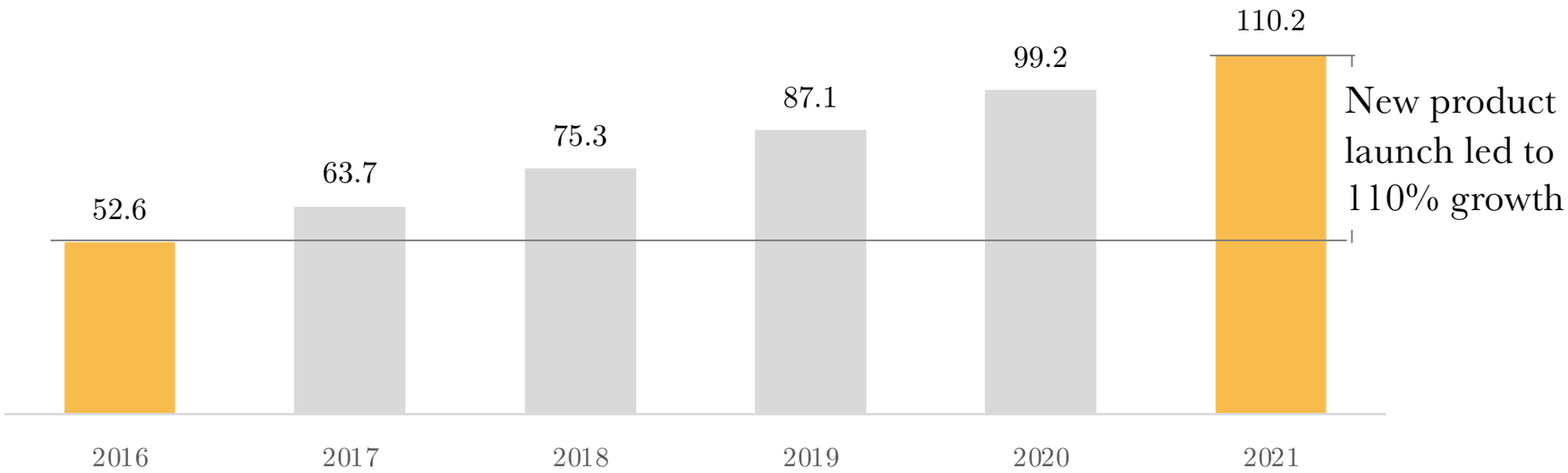

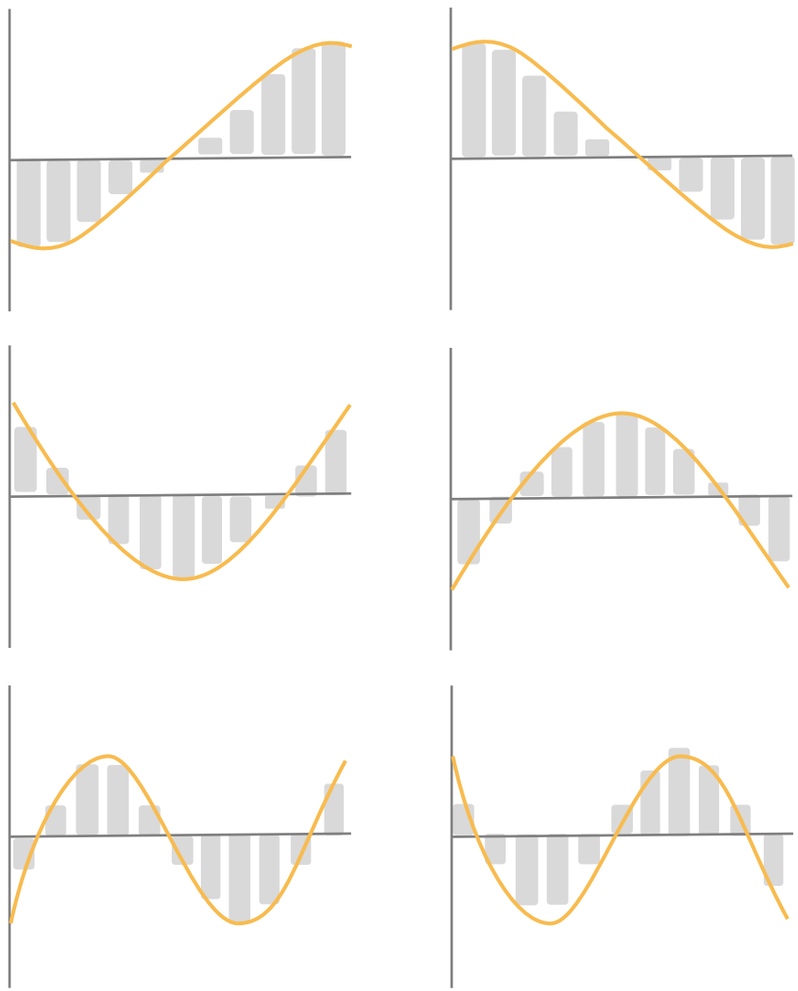

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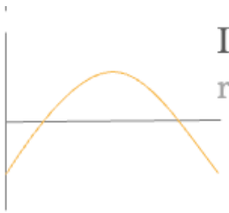
Hide-n-Reveal

Storytelling

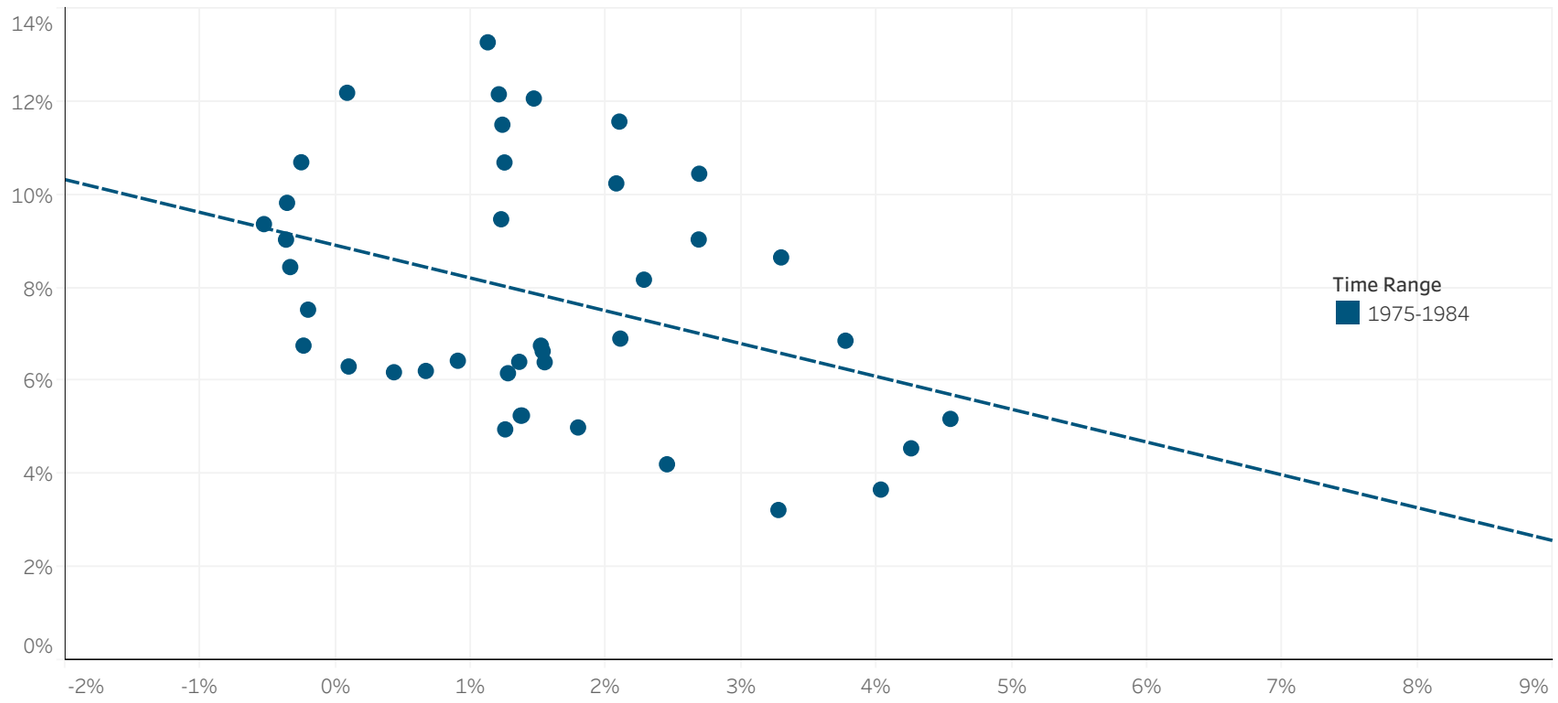
Hide-n-Reveal

Storytelling



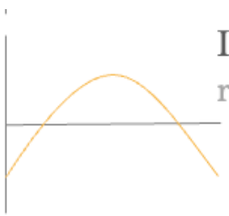
Icarus
rise-fall

Historically, the Phillips Curve demonstrated a ”close” (inverse) relationship between inflation and unemployment



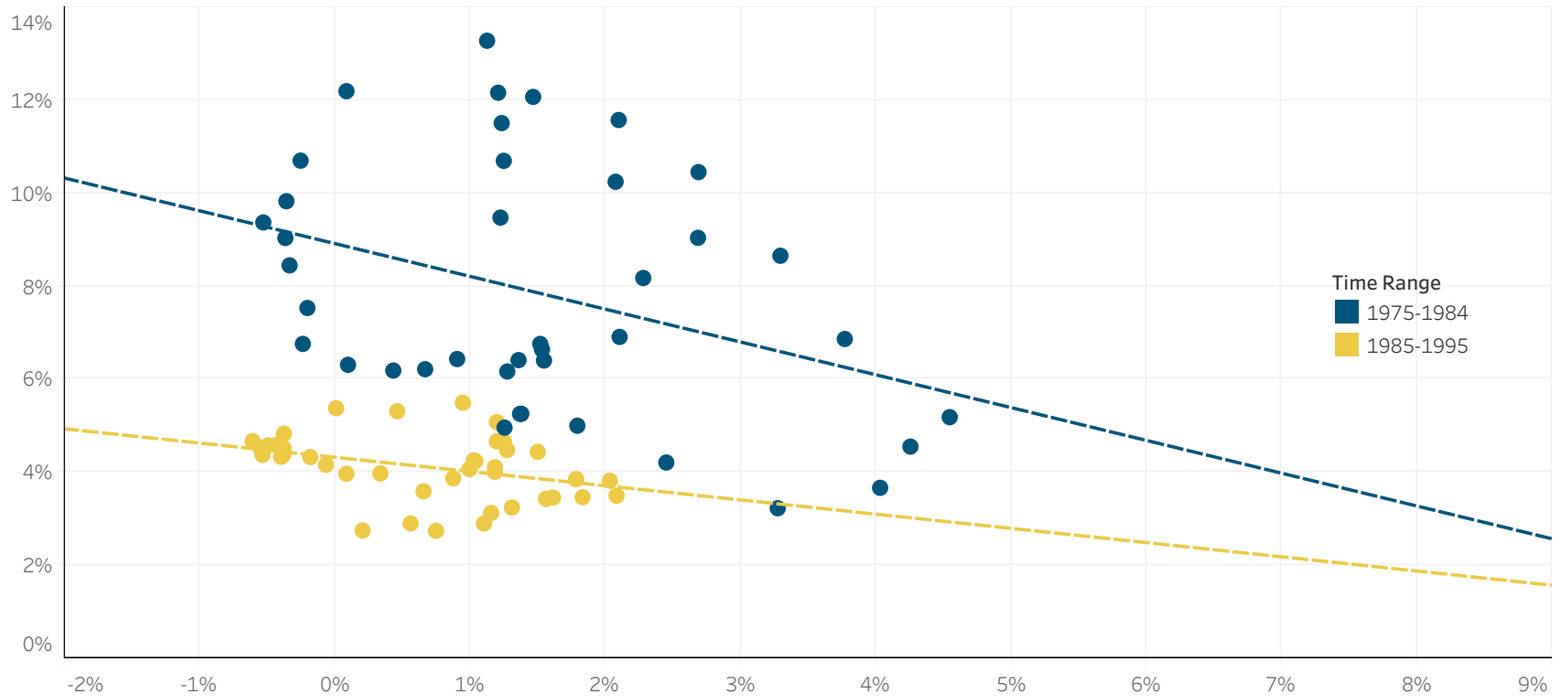
Hide-n-Reveal

Storytelling



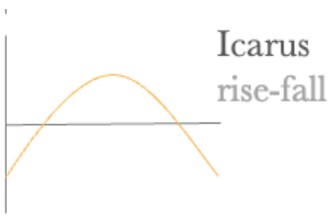
Icarus
rise-fall

Fast forwarding a decade, the inverse relationship still exists, but weakens

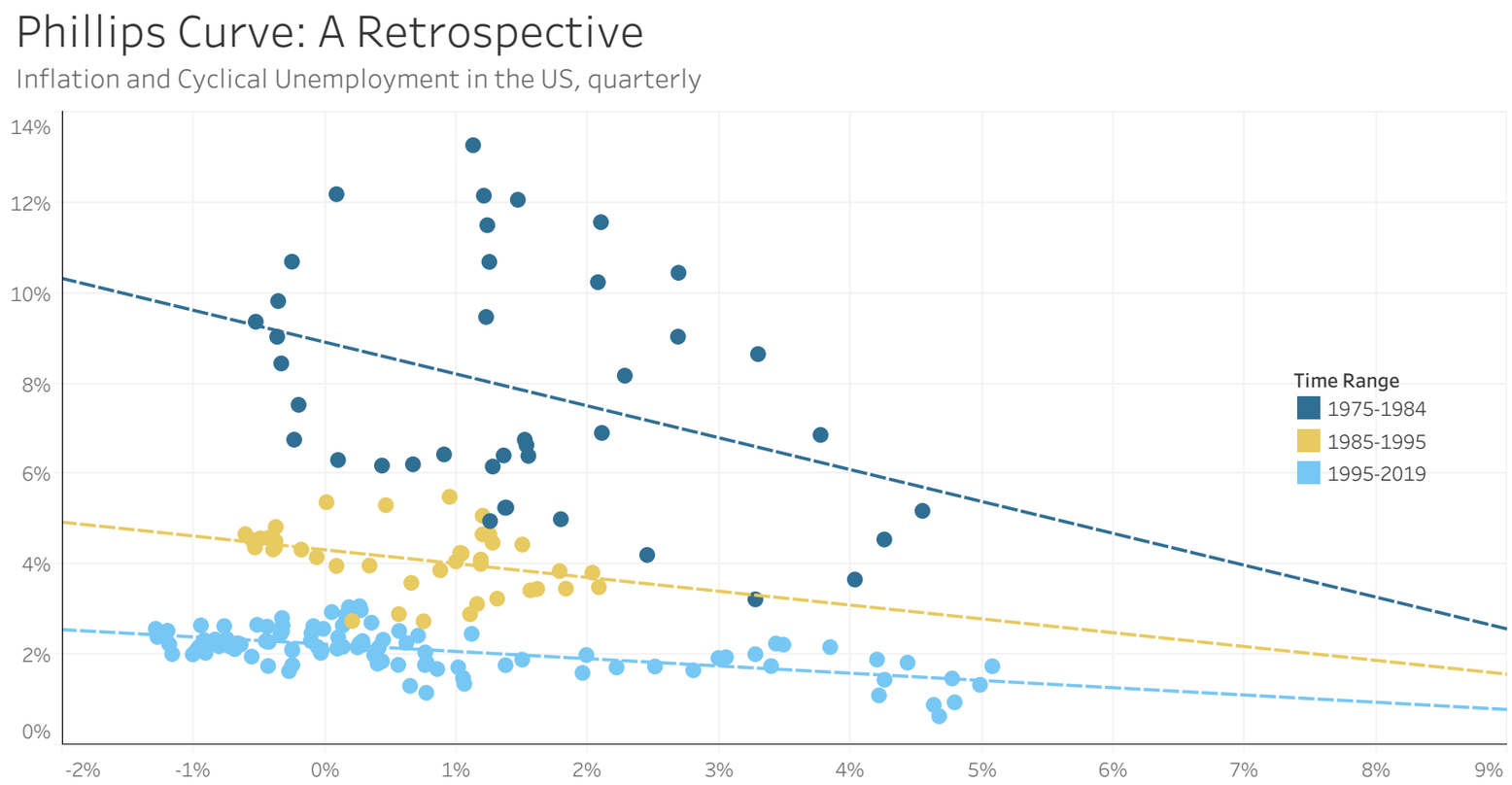


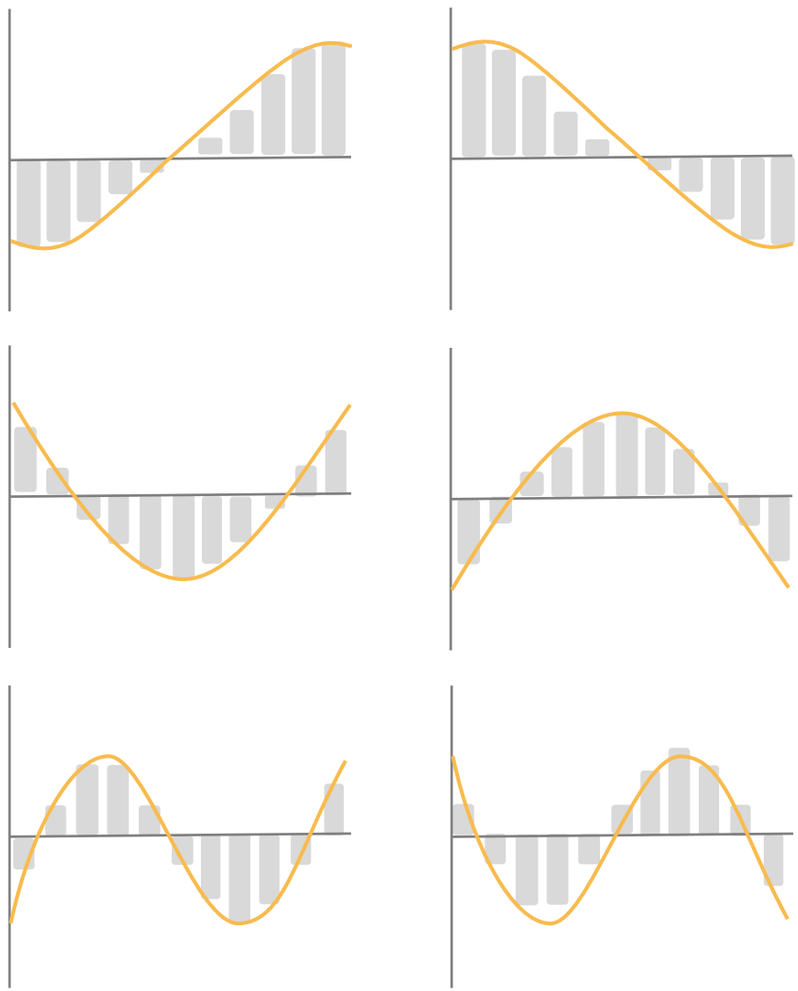
Hide-n-Reveal

Storytelling



Phillips curve relationship flatlines in pre-pandemic decades…





Stories + Data

1

Explore Data for Arcs

Are there patterns in your data that resemble story arcs?

2

+ Presentation Strategies

Context Storytelling

Can you display your data in stages by adding context? Zoom in or out? Highlight? Annotate?

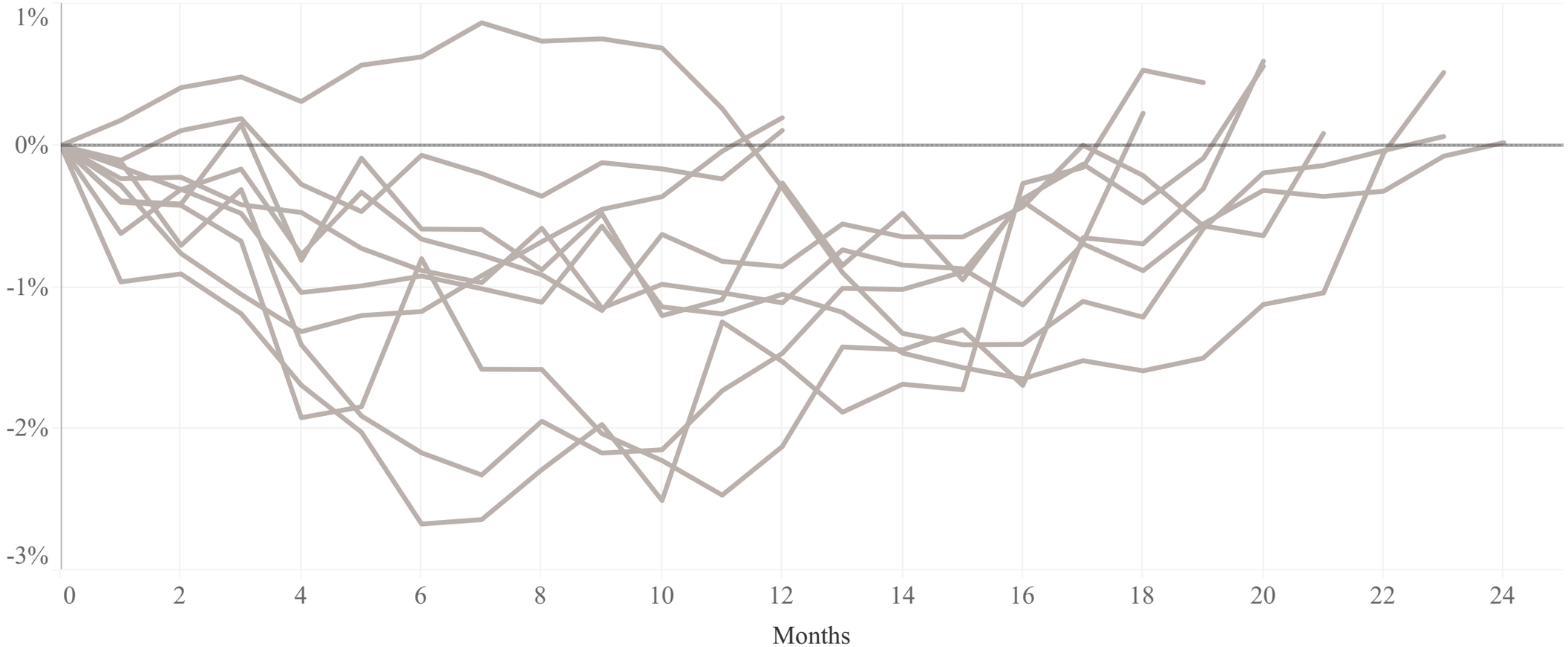
3

Hide-n-Reveal Storytelling

Thinking in arcs, can you build up to the punchline? Hide data with sudden reveal?

Job Losses during post-WWII Recessions

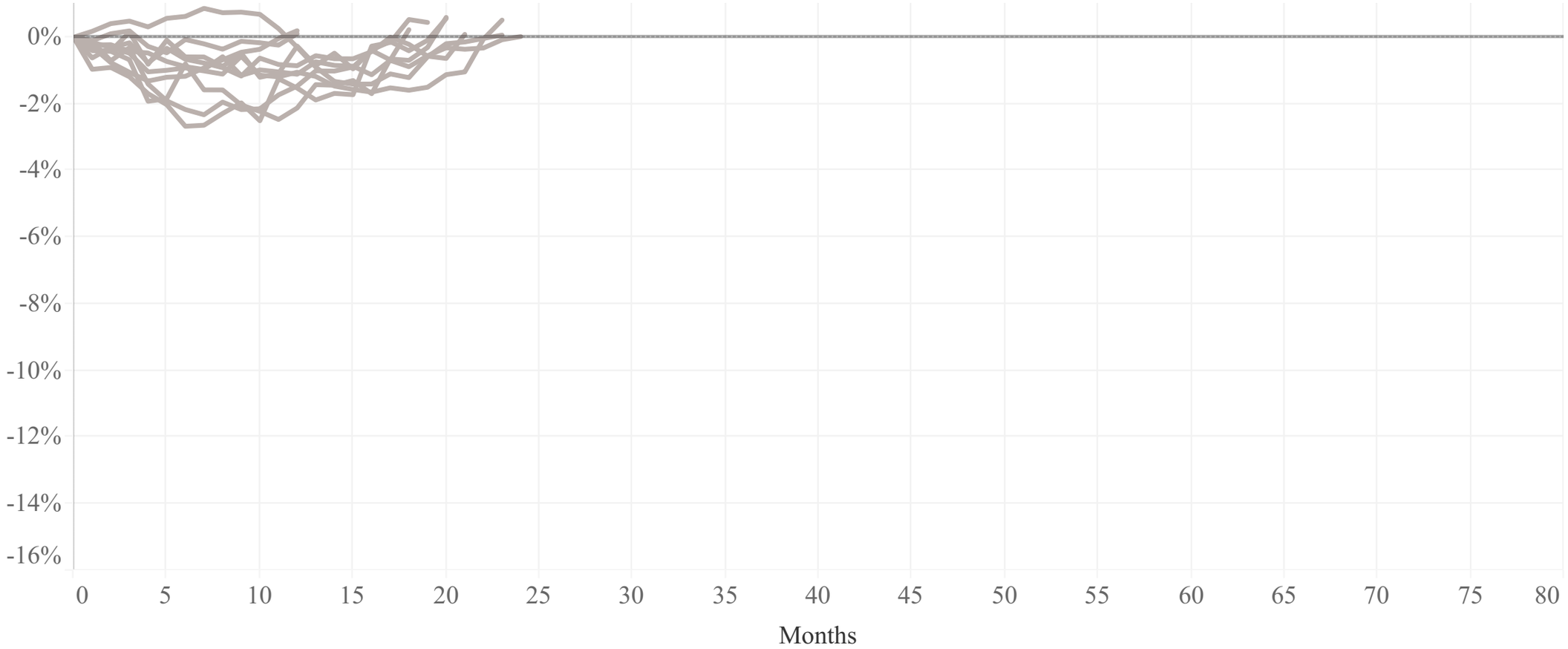
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



Source: Bureau of Labor Statistics

Job Losses during post-WWII Recessions | Typical recessions last between 18-24 months

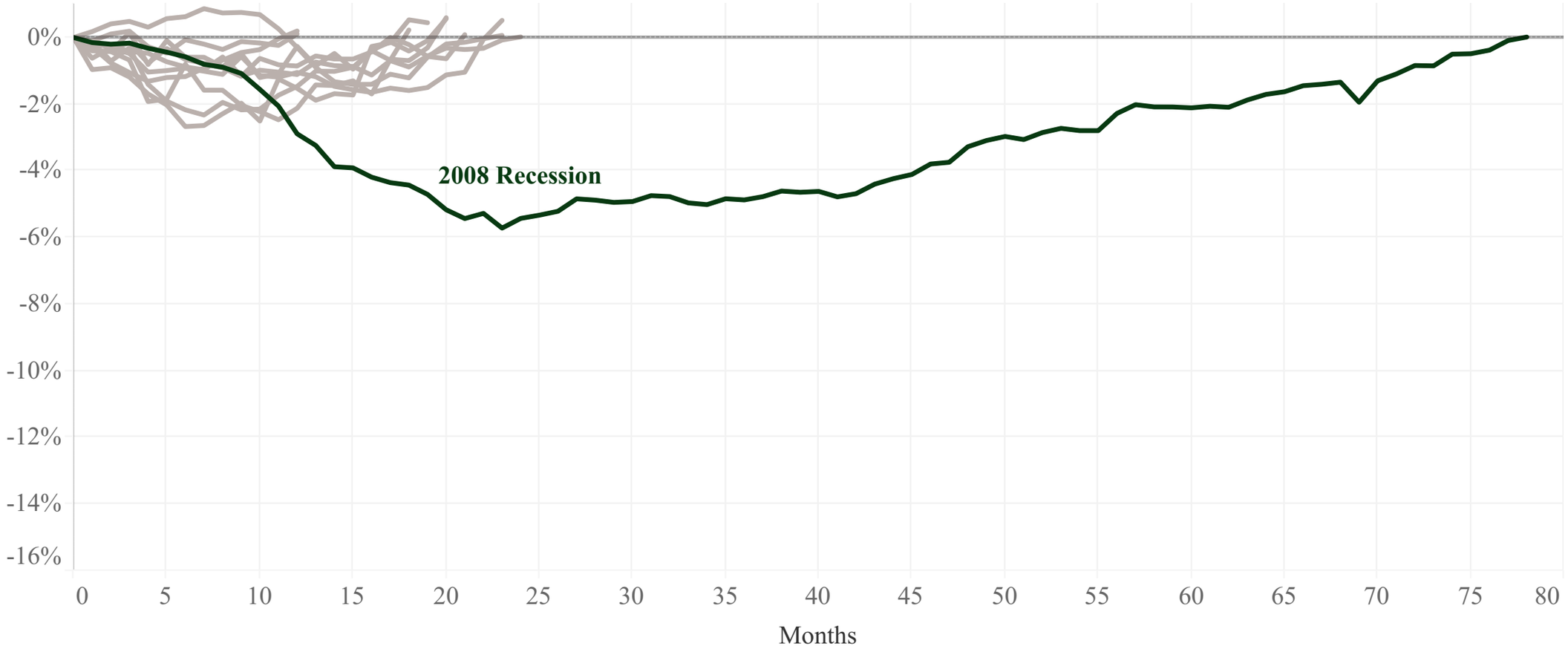
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)



Source: Bureau of Labor Statistics

Job Losses during post-WWII Recessions | The 2008 recession added length

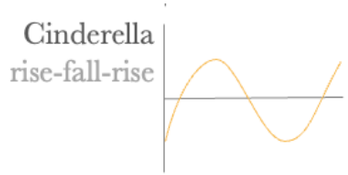
Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)

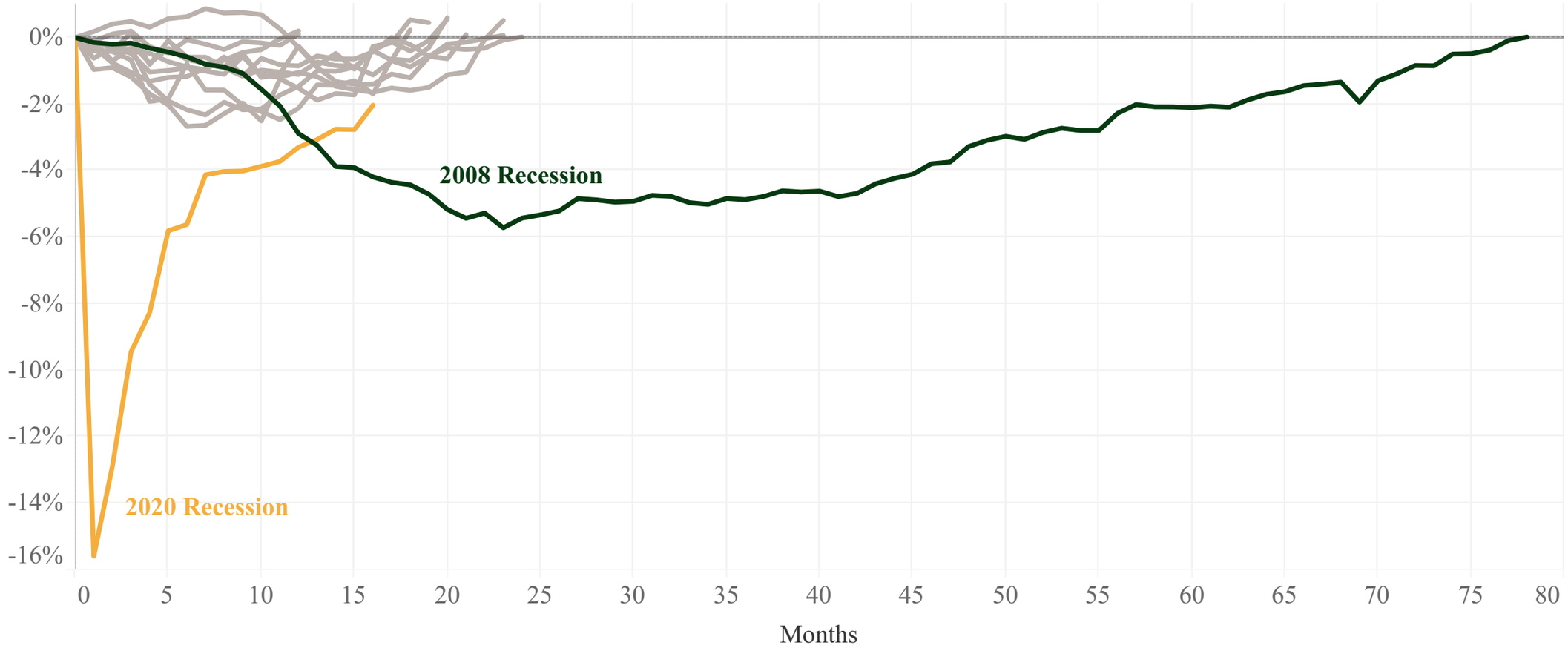


Source: Bureau of Labor Statistics

Job Losses during post-WWII Recessions | The 2020 recession added depth

Percent change relative to first month of a recession through the beginning of positive trend (updated through July 2021)





Source: Bureau of Labor Statistics

Crafting Impactful Data Stories: Storytelling

No. 1 Starting Premise

No. 2 The Power of Stories

No. 3 Stories + Data

No. 4 Strategies for Storytelling

No. 5 Jack of all Tools

No. 6 Takeaways

No. 4
Strategies for Storytelling

Searching for Stories

Make it Human

Scale + Perspective

Shock + Awe

No. 4
Strategies for Storytelling

Searching for Stories

Make it Human

Scale + Perspective

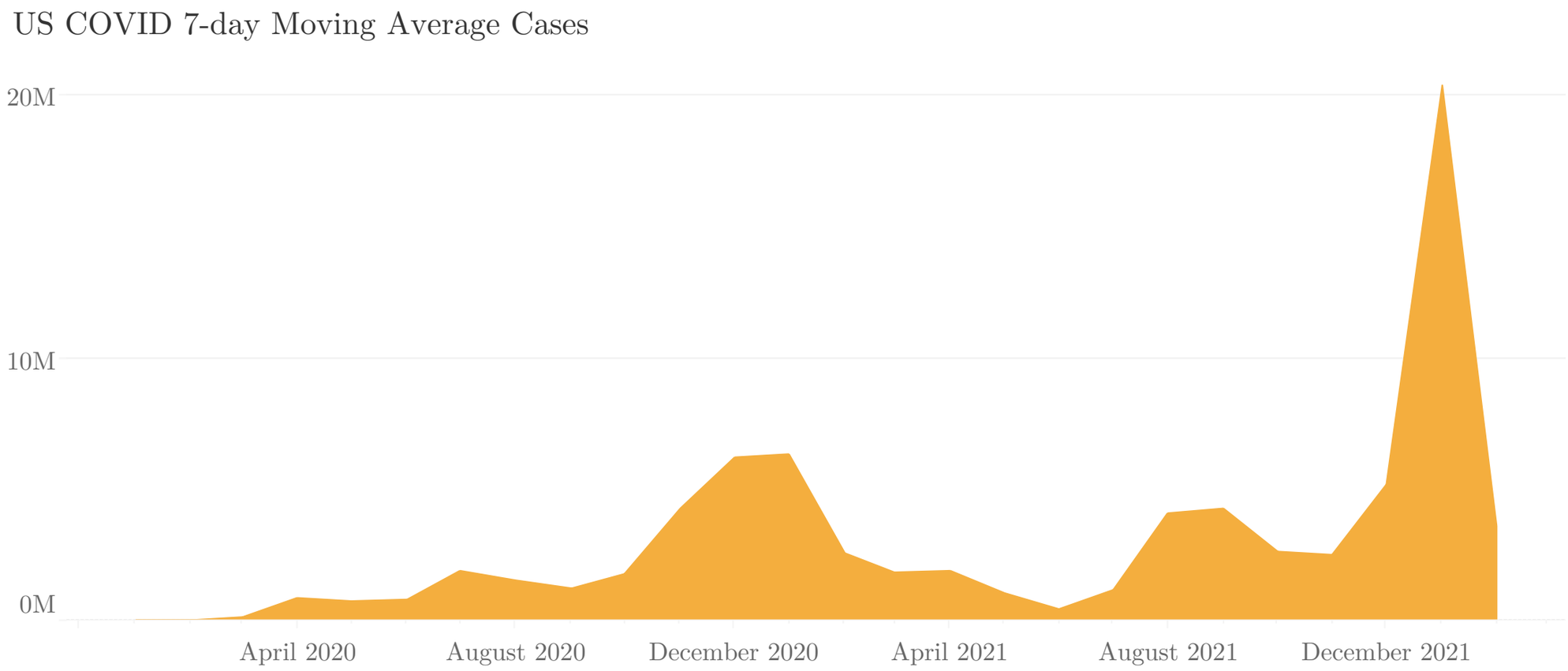
Shock + Awe

“There is magic in graphs. The profile of a curve reveals in a flash a whole situation - the life history of an epidemic, a panic, or an era of prosperity. The curve informs the mind, awakens the imagination, convinces.”

Henry Hubbard, National Bureau of Standards

excerpt from Brinton(1939). Graphical Presentation

The COVID Curve



Source: CDC

No. 4
Strategies
for
Storytelling

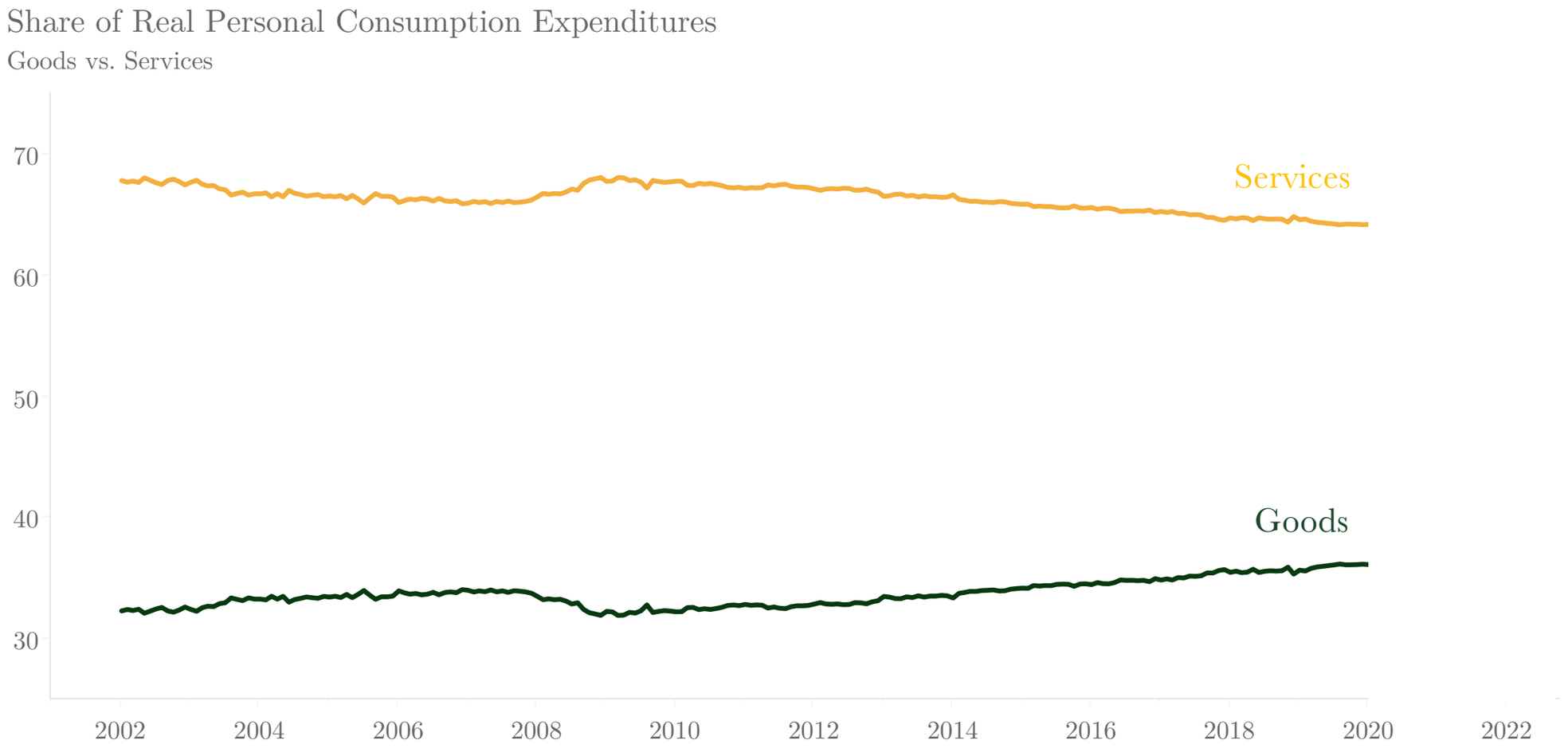
Searching for Stories

Make it Human

Scale + Perspective

Shock + Awe

Shares of consumer spending on goods and services have been relatively stable

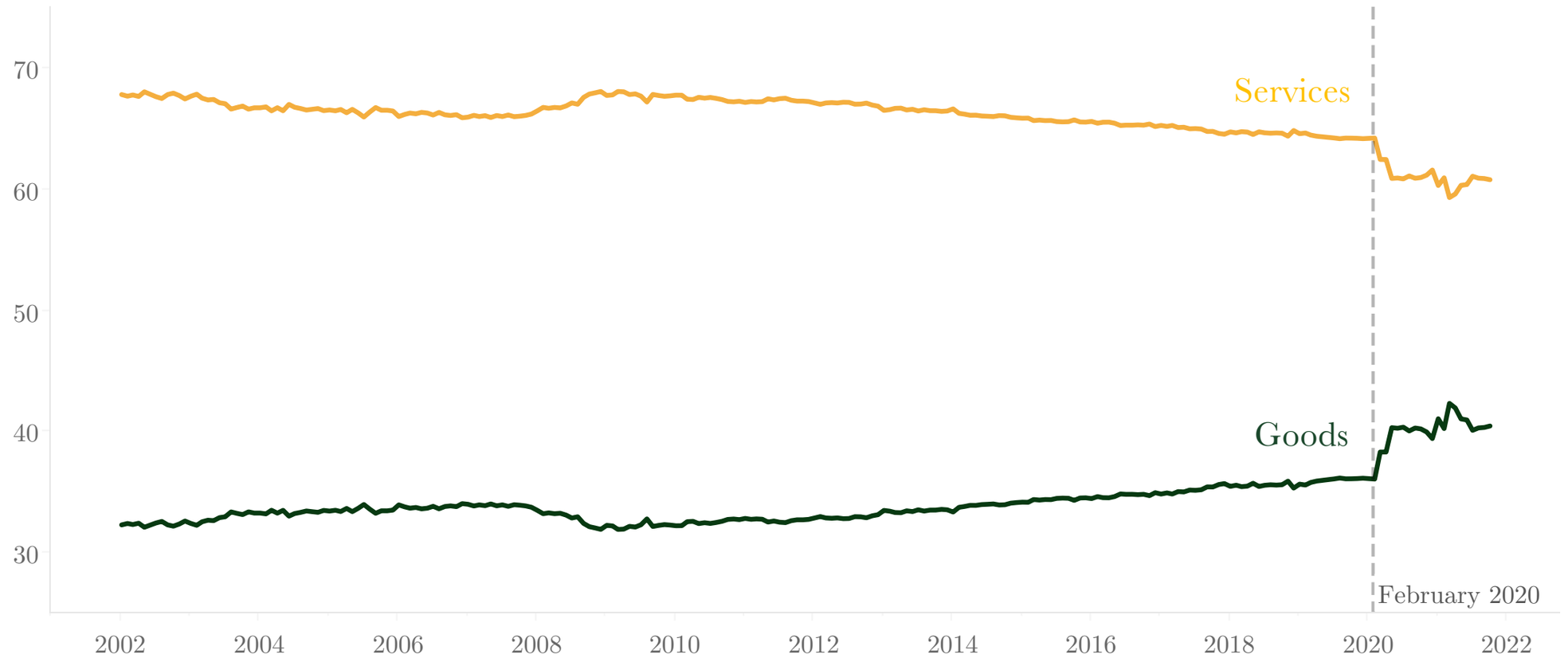


Source: BEA

The pandemic shifted preferences away from services to goods

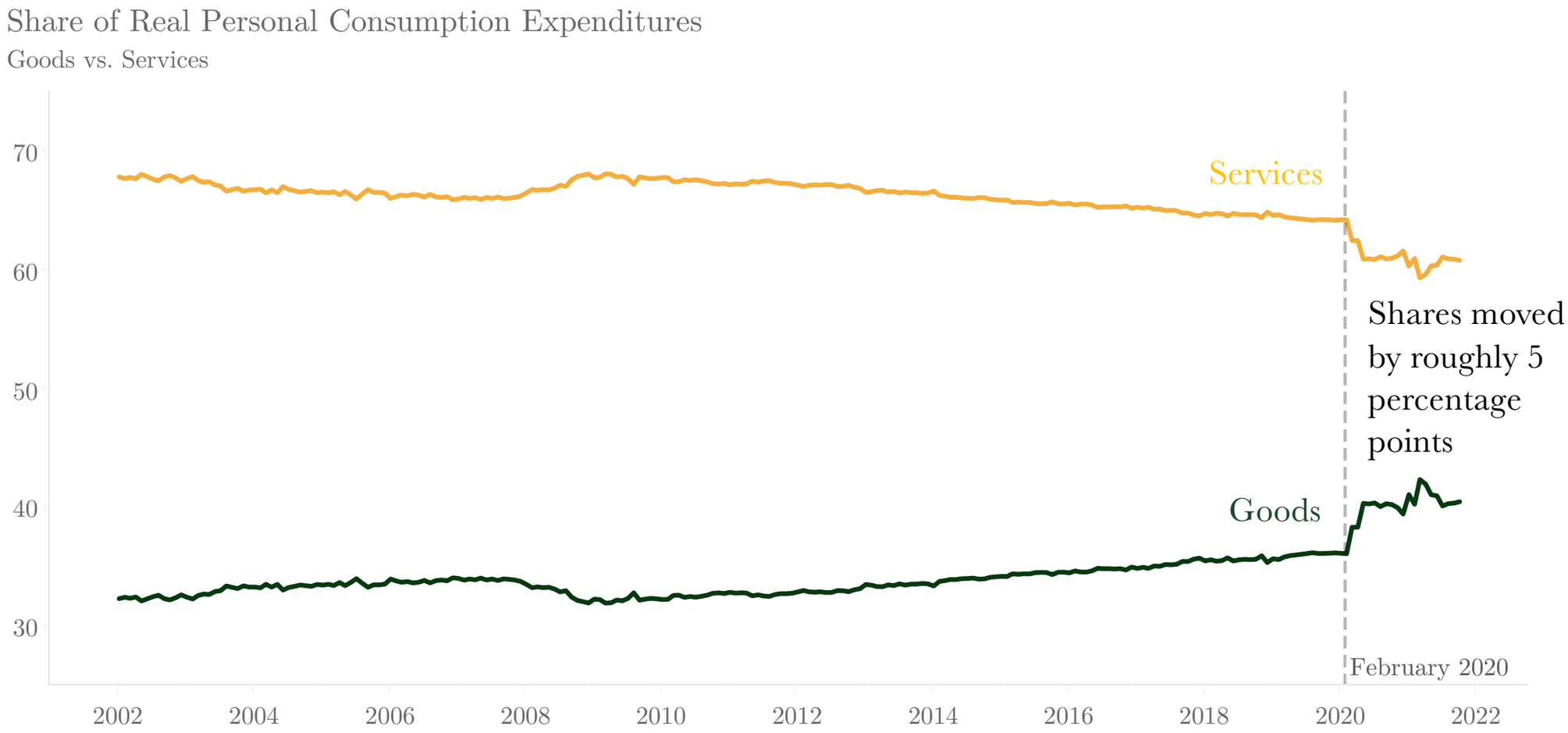
Share of Real Personal Consumption Expenditures

Goods vs. Services



Source: BEA

The pandemic shifted preferences away from services to goods



Source: BEA

This shift helped to kickstart supply chain challenges

Perspective

GDP 2019Q4 | Personal Consumption Expenditures

$14.7 trillion

Source: BEA

No. 4
Strategies for Storytelling

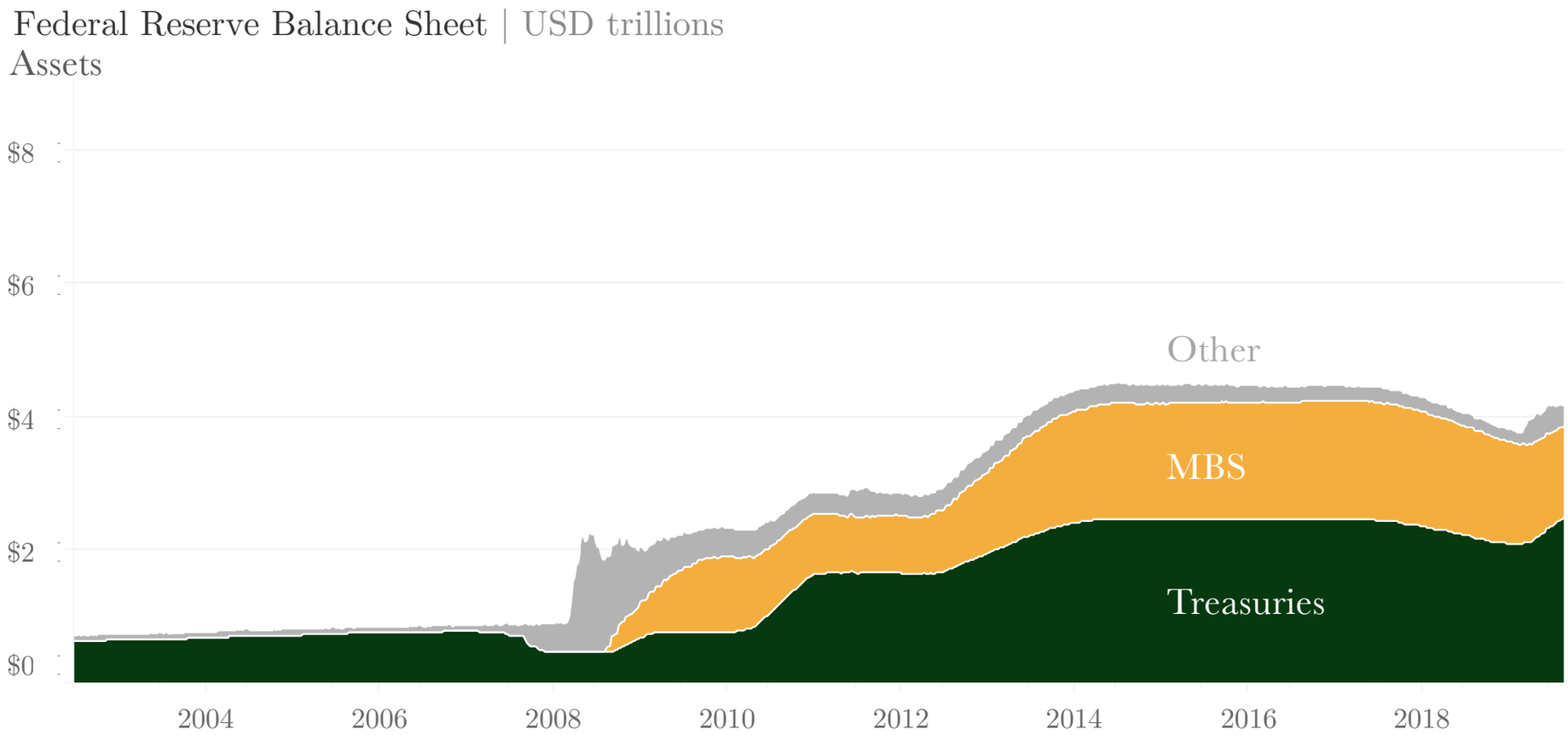
Searching for Stories

Make it Human

Scale + Perspective

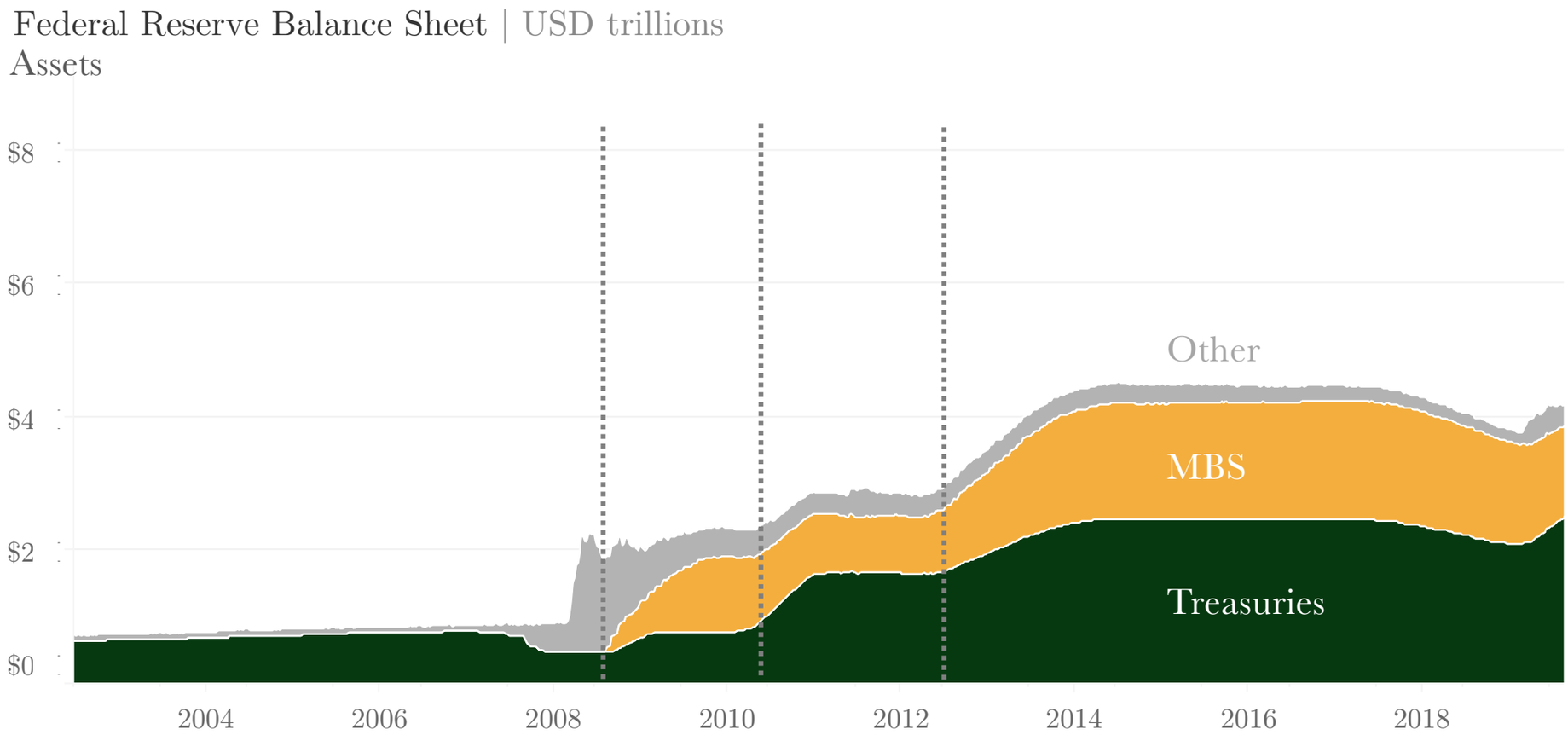
Shock + Awe

Quantitative Easing has been a new policy tool of the Fed beginning in the Great Recession



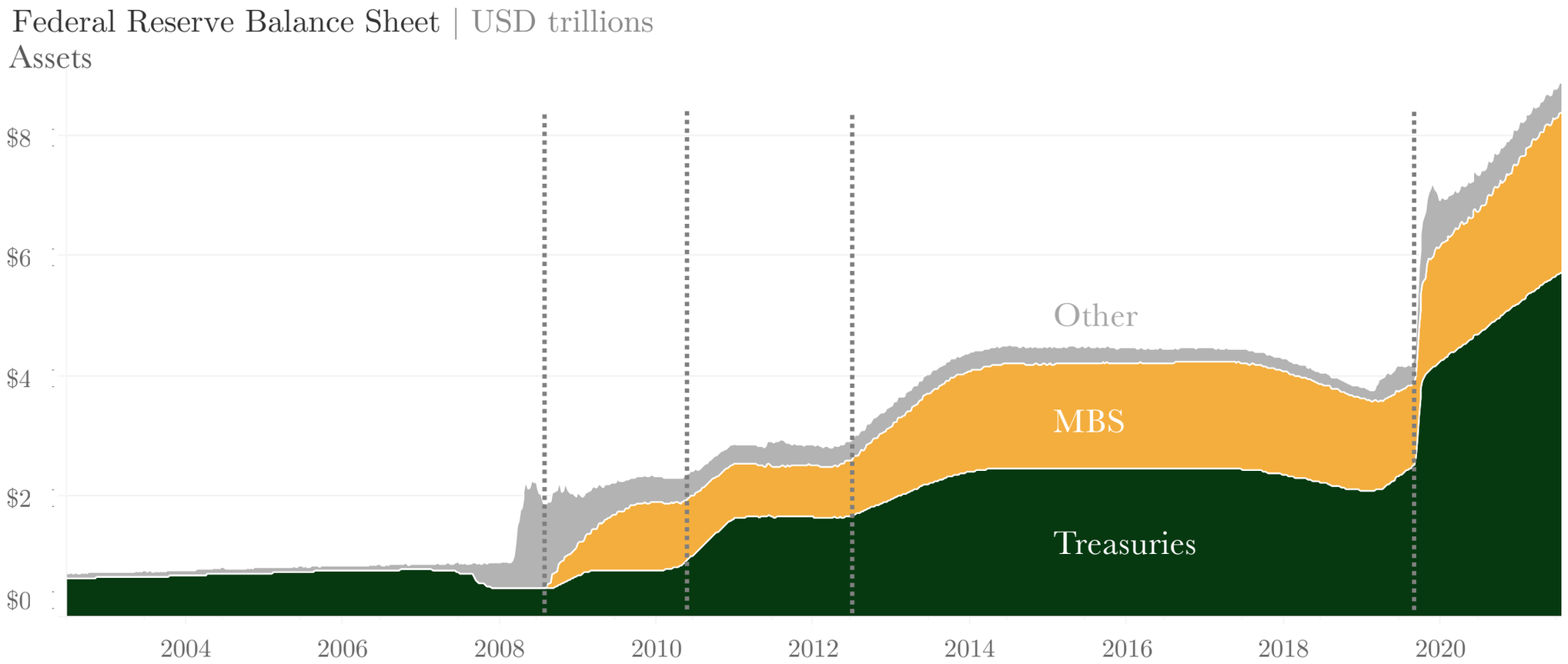
Source: Federal Reserve

The first rounds of QE are evident when looking at the Federal Reserve assets



Source: Federal Reserve

The Fed pulled out the Great Recession playbook for their pandemic response with another round of QE



Source: Federal Reserve

No. 4
Strategies for Storytelling

Searching for Stories

Make it Human

Scale + Perspective

Shock + Awe

Overview

No. 1 Starting Premise

No. 2 The Power of Stories

No. 3 Stories + Data

No. 4 Strategies for Storytelling

No. 5 Jack of all Tools

No. 6 Takeaways

No. 5
Jack of all Tools

“Jack of all trades, master of none

No. 5
Jack of all Tools

“Jack of all trades, master of none,
Oftentimes better than a master of one

No. 5
Jack of all Tools

Leverage any and all tools at your disposal to create visuals + stories

Visualize
Excel, Tableau, Power BI, R, Python, etc

+

Tell the Story
Illustrator, Photoshop, Powerpoint, etc.

No. 5
Jack of all Tools

Leverage any and all tools at your disposal to create visuals + stories

Visualize
Excel, Tableau, Power BI, R, Python, etc

+

Tell the Story
Illustrator, Photoshop, Powerpoint, etc.

Be Creative

Overview

No. 1 Starting Premise

No. 2 The Power of Stories

No. 3 Stories + Data

No. 4 Strategies for Storytelling

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No. 6 Takeaways

No. 6
Takeaways

1. Presenting with storytelling techniques improves audience retention – use strategically
2. Explore your data for story arcs and patterns – use context + hide-n-reveal presentation techniques along with storytelling strategies: make the data human, provide scale, shock and awe
3. Leverage the power of multiple tools to tell your story
4. Data + Data Visualization Design + Storytelling | Impact

No. 6
Takeaways

1 Presenting with storytelling techniques improves audience retention – use strategically

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4 Data + Data Visualization Design + Storytelling | Impact

No. 6
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4. Data + Data Visualization Design + Storytelling

Impact

Case Study

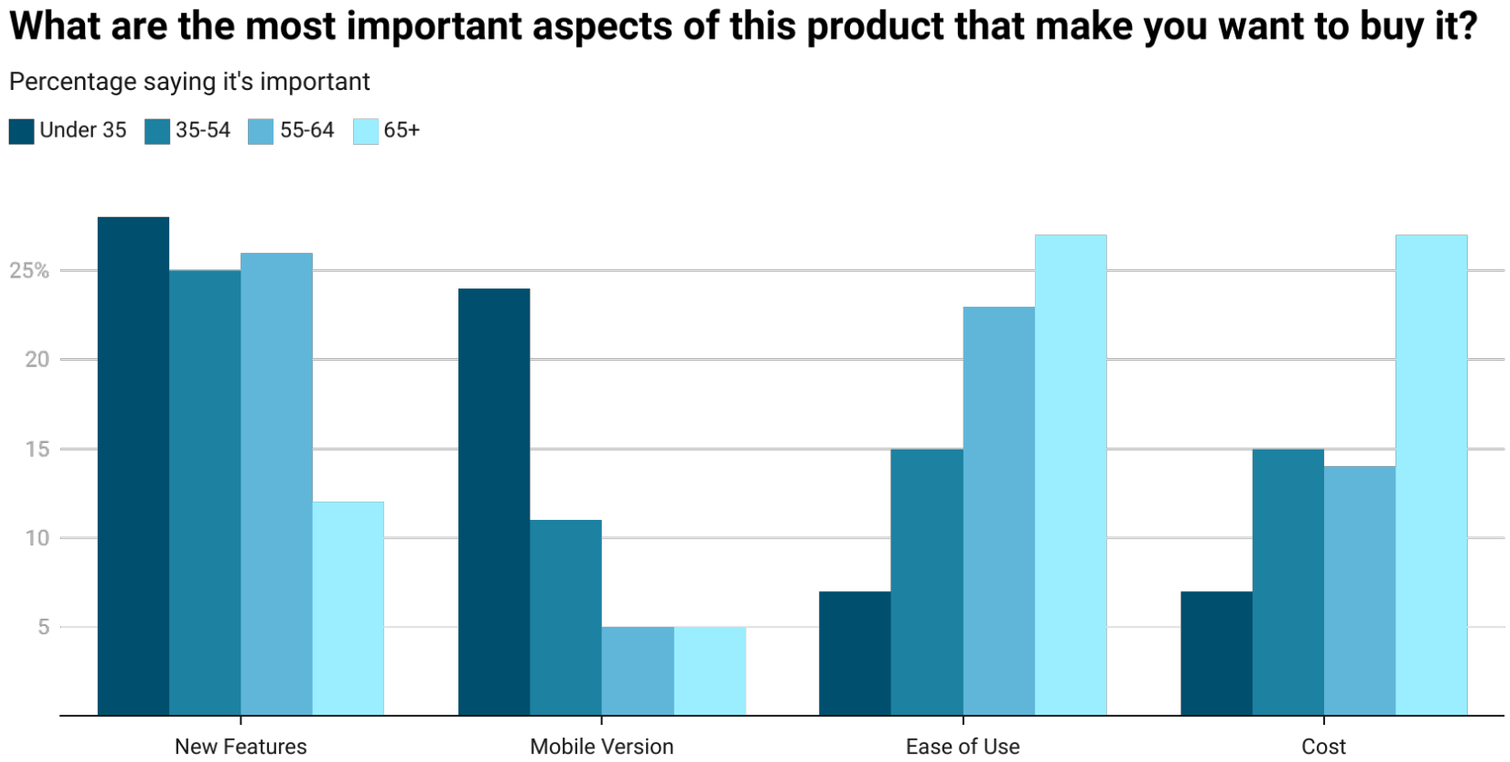
Practice

Data Visualization

Design Principles | Exploration + Conception | Storytelling

* Using your assigned visual:

1. Redesign the visual as needed
2. Tell a two-three slide story of the visual for a presentation



Crafting Impactful Data Stories:

Design Principles
Exploration + Conception
Storytelling

Agenda

Data Visualization Design Principles

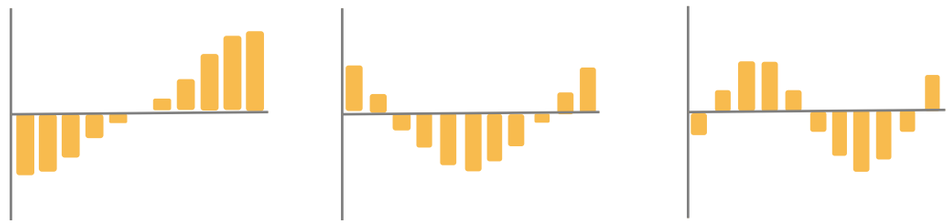
Chart Types + EDA

Break

Storytelling

Takeaways

So…what just happened?



No. 1

Data Visualization

Design Process

1 Think

What's the main idea of this visual?

Who is the audience?

What is the medium of distribution?

Is this visual exploratory or declarative?

2 Sketch

Explore chart type possibilities
State the goal + signal words

Be creative

Sketch

3 Create

Digital prototype

Leverage tools

Structure

Simplicity

4 Articulate

Main idea | 5 second rule

Refine for impact:
- Preattentive attributes
- Highlight + Annotate + Frame

No. 2

Storytelling

Presenting for Impact

Stories + Data + Strategy

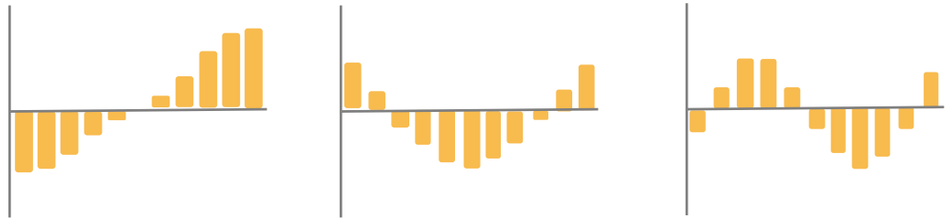
1. Explore Data for Arcs
2. Context Storytelling
3. Hide-n-Reveal Storytelling

Searching for Stories

1. Make it Human
2. Scale + Perspective
3. Shock + Awe

Crafting Impactful Data Stories

Design Principles | Exploration + Conception | Storytelling



No. 1

Data Visualization Design Process

1 Think

Main idea
Audience
Medium
Purpose

2 Sketch

Explore chart types
State the goal + signal words
Be creative
Sketch

3 Create

Digital prototype
Leverage tools
Structure
Simplicity

4 Articulate

Refine for impact:
Preattentive attributes
Highlight + Annotate + Frame
Five-second rule

No. 2

Storytelling Presenting for Impact

1 Stories + Strategy

Explore for arcs
Context
Hide-n-Reveal

2 Searching for Stories

Make it human
Scale + Perspective
Shock + awe