

# SPILLING THE BEANS ON TRADE COFFEE



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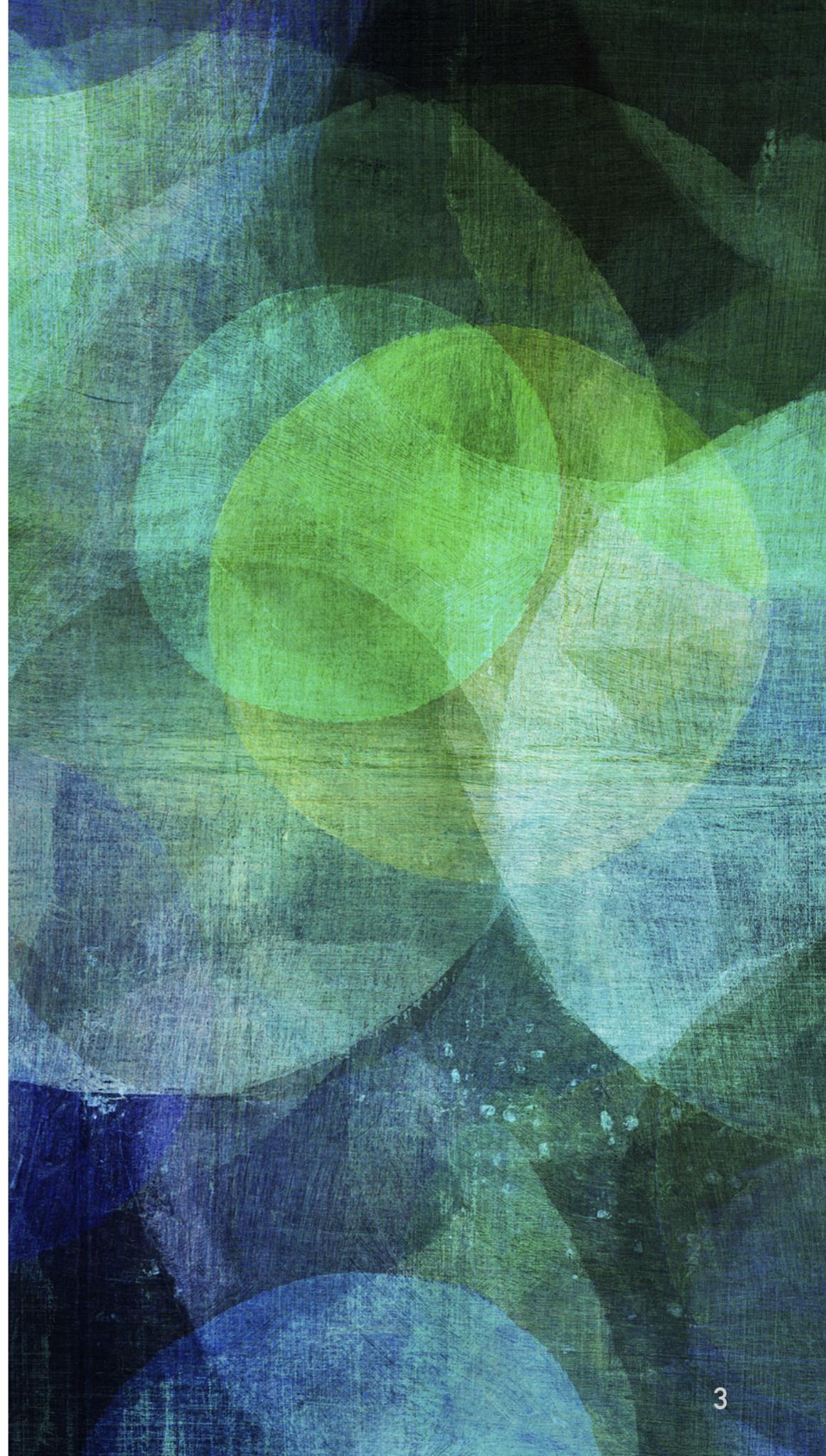
# OUTLINE

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- Background
  - Coffee Consumption in the US
  - Specialty Coffee and the Third Wave
- Trade Coffee
- Web Scraping Trade Coffee
- Data Processing and Analysis
- Insights and Observations
- Conclusions

# COFFEE

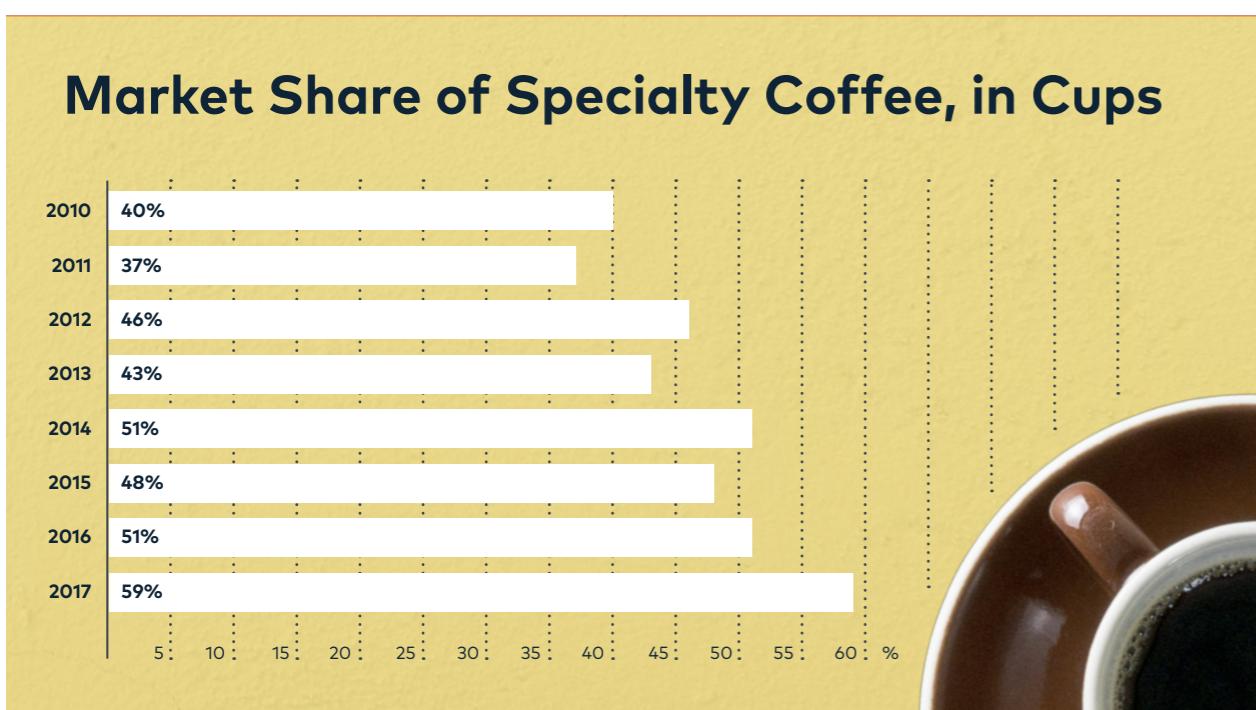
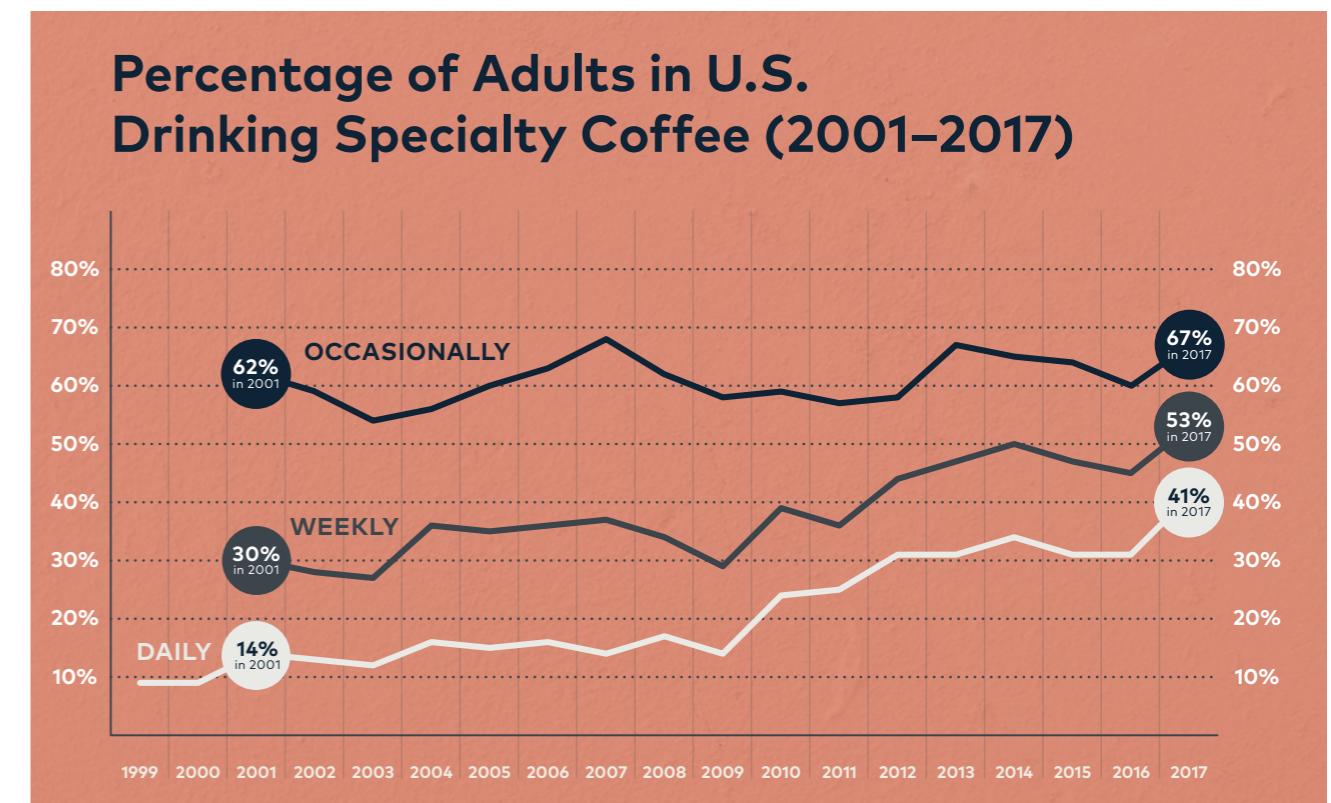
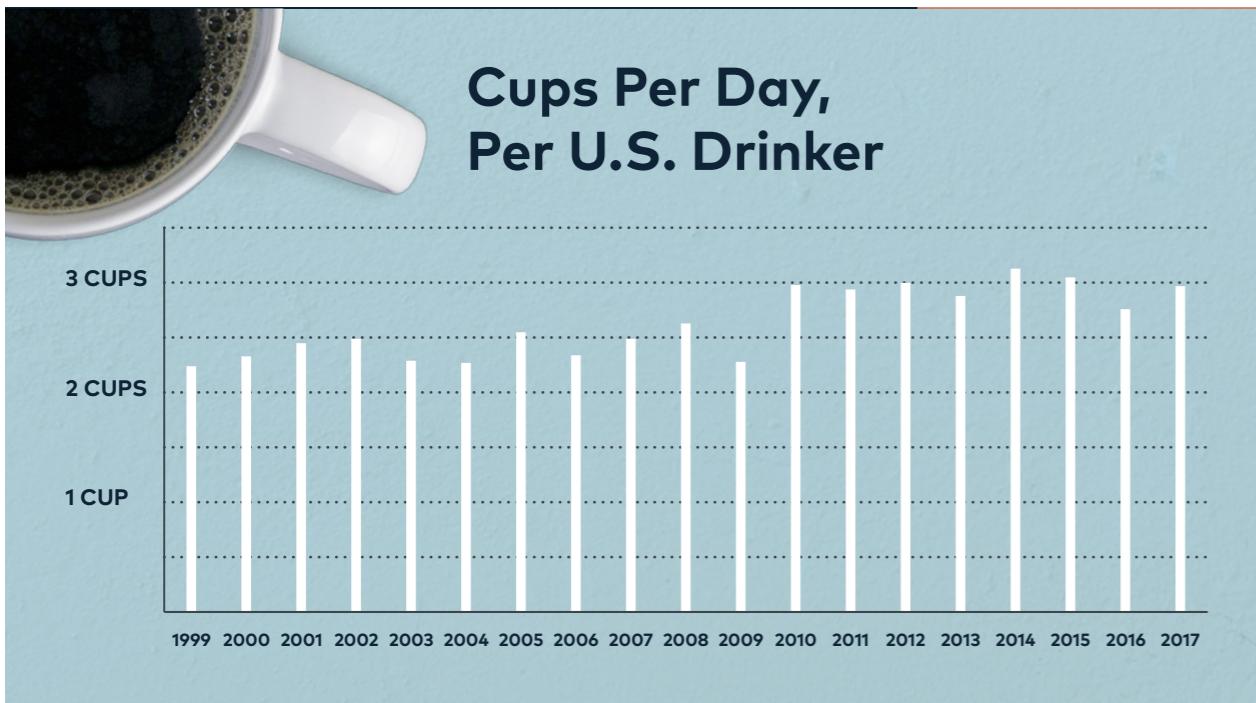
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# US COFFEE CONSUMPTION



## 2017 U.S. Specialty Coffee Consumption Trends



- Average Price in the US: \$3.12
- Starbucks: \$1.95 to \$2.15
- Most expensive: \$18 at Extraction Lab in Brooklyn, NY

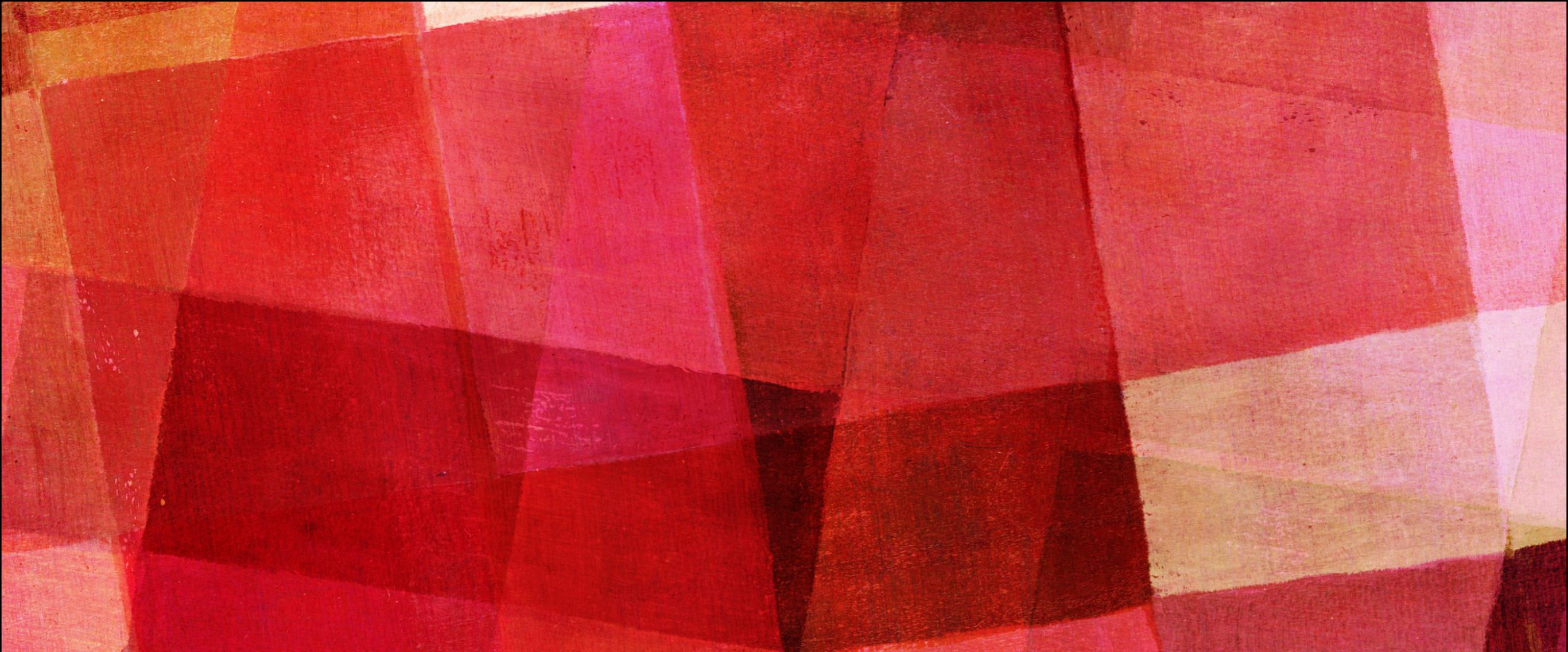
Source: UBS, Eater.com

# SPECIALTY COFFEE AND THE THIRD WAVE

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- The journey from bean to cup is very important.
  - From where and how the coffee beans are grown and harvested
  - Processing from cherry to green bean
  - Roasters
  - Consumer
- Single Origin Coffees
  - grown within a single known geographic origin





# TRADE COFFEE

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# WHAT IS TRADE?

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- Partner with craft coffee roasters across America
- Better coffee at home.
- Offer a curated collection of seasonal, freshly roasted-to-order coffees.
- **seasonal coffees with exceptional taste, ethically sourced from respected farmers and producers**
- deliver the highest quality, premium freshness

# WHY TRADE?

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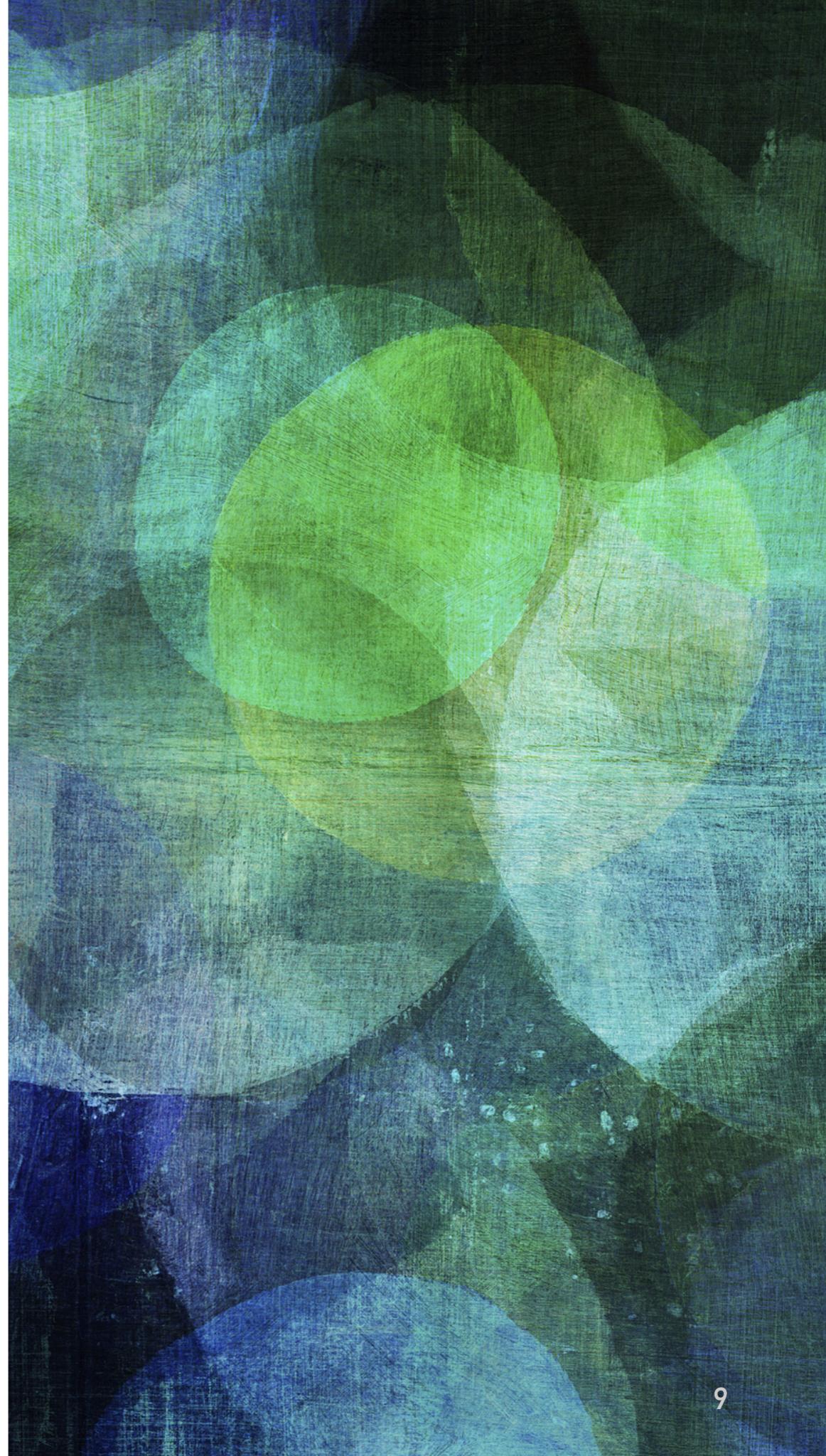
- Is TRADE a good resource for procuring and learning about coffee?
- Do they truly offer a diverse selection of coffees that can appeal to different tastes, price points?
- Will it satisfy both the needs of the seasoned coffee enthusiast and coffee novices?
- Is it a good jump off point for those interested in getting into specialty coffee?



# LET'S GET CAFFEINATED

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*Web Scraping with Selenium*



# WHERE IT ALL BEGAN: THE FIRST PAGE

The screenshot shows a web browser displaying the website <https://www.drinktrade.com/coffee/all-coffee>. The page title is "Top-Rated Specialty Coffee". The URL in the address bar is highlighted with a red box. The page features a large title "Top-Rated Specialty Coffee" and a subtitle explaining the offerings. Below the title are filters for "Price" and "Roast Level", and a sorting option "Relevance". The main content area displays three coffee products: "Ouills" (with a white bag image), "Eagle" (with a dark bag image), and "Red Line" (with a red bag image).

Top-Rated Whole Bean and Ground Coffee

https://www.drinktrade.com/coffee/all-coffee

Trade

Coffee Roasters Equipment How-To's

GET MATCHED

Coffee › Top-Rated Specialty Coffee

# Top-Rated Specialty Coffee

Our 400+ specialty coffees come from the best in the nation and are roasted fresh only when you place your order! So whether you take it whole or ground, decaf or full throttle, your top-rated coffee is guaranteed a winner.

Filter

Clear 458 Coffees

Sort Relevance

Price +

Roast Level +

Ouills

Eagle

Red Line

# THE SITE: ELEMENTS OF INTEREST

.....

- Name
- Roaster
- Single Origin/Blend
- Price
- Flavor notes, Descriptors
- Origin
- Varietal
- Roast Level

**Tarrazu Vienna | George Howell**

[Trade](#)

Coffee   Roasters   Equipment   How-To's

[GET MATCHED](#)   [SEARCH](#)   [LOG IN](#)   [SIGN UP](#)



**George Howell**

**Tarrazu Vienna**

\$14.00 | 12 oz.

Enjoy this classic cup of coffee from a master among roasters. Rich, bittersweet caramel with dark chocolate undertones make this one worth savoring.

Quantity

Grind

 Roasting Schedule

**Roasts On Wednesday**

Sun Mon Tue Wed Thur Fri Sat

 Trade Roast Level

**Medium-Dark Roast**

 Taste

**Chocolatey & Sweet**

A classic expression of Costa Rica with hints of Milk Chocolate and Nut

**Details**

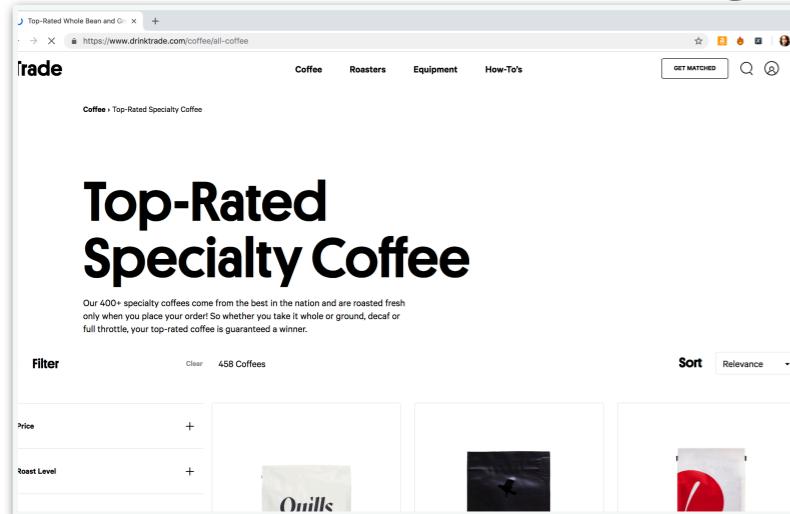
<b>Tarrazu Vienna</b>	Sub Region	Harvest Time	Varietal
 Process Washed	 Sub Region Tarrazu	 Harvest Time January 2018	 Varietal Caturra & Catuai
Elevation 1190 - 1890			

**Roaster's Notes**

Tarrazu is a land of small farmers in a tumultuous landscape of lush green peaks, some rising over 10,000 feet, and valleys. The climate has well defined seasons: the long dry season, from December to April, coincides perfectly with the coffee harvest, leading to very even, full ripening - ideal for preparing quality coffee. Rich, bittersweet caramel with dark chocolate undertones and a whisper of citrus.

# FROM BEAN TO CUP... HOW I GOT MY DATA...

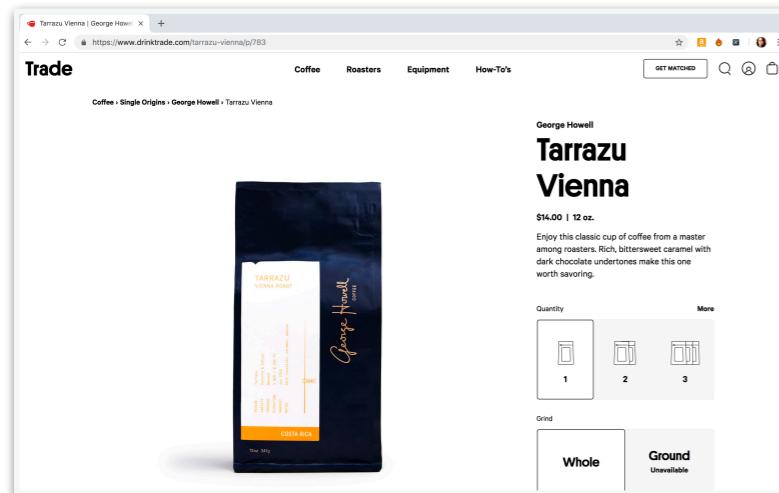
*Start: Main Product Page*



The screenshot shows the homepage of drinktrade.com. The top navigation bar includes links for Coffee, Roasters, Equipment, and How-To's, along with a 'GET MATCHED' button. Below the header, a large section titled 'Top-Rated Specialty Coffee' features a grid of coffee products. A filter sidebar on the left allows users to refine their search by Price and Roast Level. A prominent call-to-action button at the bottom right says 'View All'.

*How many products are available?  
Categories?*

*Individual Product Page*



The screenshot shows a detailed view of a specific coffee product. The product is named 'Tarrazu Vienna' by George Howell. It is described as a 'Single Origin' coffee from Costa Rica. The price is listed as \$14.00 for 12 oz. The product image shows a dark blue bag of coffee beans. Below the image, there is a brief description: 'Enjoy this classic cup of coffee from a master among roasters. Rich, bittersweet caramel with dark chocolate undertones make this one worth savoring.' There are also sections for 'Quantity' (with options for 1, 2, or 3 bags) and 'Grind' (with options for Whole or Ground).

*All you need to know about the Coffee!  
Basic: name, price, flavor profile, roaster  
Detailed: varietal, elevation, subregion, producer,  
harvest*

# FROM BEAN TO CUP... HOW I GOT MY DATA

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## Scrape the Web Page



### Attempt # 1: Scrapy - FAIL

- hidden elements
- dynamic webpage
- incomplete web scraping

### Attempt # 2: Selenium - SUCCESS!

- challenge: non unique XPaths... which led to challenges downstream

	name	roaster	descriptor	price	weight	location	roasternotes	blend_single	roastlevel	classification	flavornotes	extra
0	71 House	Irving Farm	This signature House Blend was crafted as the ...	\$14.75	12 oz.	New York, NY	Our signature House Blend was created as the h...	Blends	Medium Roast	Sweet & Smooth	A traditional base with hints of Milk Chocolate...	['Process', 'Washed', 'Varietal', 'Bourbon', 'Cafe...', 'Smooth', 'Sweet', 'Medium', 'Roast', 'Blends', 'Single', 'Origins', 'Light-Medium', 'Roast', 'Chocolaty & Sweet', 'A classic expression of Costa Rica with hints ...', 'Nostalgic with hints of Milk Chocolate and Sweet', 'Medium-Dark', 'Roast', 'Comforting & Rich', 'Ad Astra is a very heavy, dark roasted blend', 'Santa Maria is back in Huckleberry's lineup, h...', 'If your coffee substitutes as breakfast, this ...']
1	Costa Rica Santa Maria	Huckleberry	Smooth, lush, and clean, with soft apple acidity...	\$17.00	12 oz.	Denver, CO	Santa Maria is back in Huckleberry's lineup, h...	Single Origins	Light-Medium Roast	Chocolaty & Sweet	A classic expression of Costa Rica with hints ...	['Process', 'Washed', 'Varietal', 'Sub Region', 'San Jose', 'Smooth', 'Sweet', 'Medium', 'Roast', 'Blends', 'Single', 'Origins', 'Light-Medium', 'Roast', 'Chocolaty & Sweet', 'A classic expression of Costa Rica with hints ...', 'Nostalgic with hints of Milk Chocolate and Sweet', 'Medium-Dark', 'Roast', 'Comforting & Rich', 'Ad Astra is a very heavy, dark roasted blend', 'Santa Maria is back in Huckleberry's lineup, h...', 'If your coffee substitutes as breakfast, this ...']
2	Ad Astra Signature Blend	PT's	If your coffee substitutes as breakfast, this ...	\$17.50	12 oz.	Topeka, KS	Ad Astra is a very heavy, dark roasted blend	Blends	Medium-Dark Roast	Comforting & Rich	Nostalgic with hints of Milk Chocolate and Sweet	['Process', 'Washed', 'Varietal', 'Sub Region', 'San Jose', 'Smooth', 'Sweet', 'Medium', 'Roast', 'Blends', 'Single', 'Origins', 'Light-Medium', 'Roast', 'Chocolaty & Sweet', 'A classic expression of Costa Rica with hints ...', 'Nostalgic with hints of Milk Chocolate and Sweet', 'Medium-Dark', 'Roast', 'Comforting & Rich', 'Ad Astra is a very heavy, dark roasted blend', 'Santa Maria is back in Huckleberry's lineup, h...', 'If your coffee substitutes as breakfast, this ...']

# FROM BEAN TO CUP... HOW I GOT MY DATA

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Scrape the Web Page



Clean Data

- duplicate entries, remove
- Convert into proper data types
- Convert prices/weights into same units
- From 470 products down to 452 coffees

	<b>name</b>	<b>roaster</b>	<b>descriptor</b>	<b>price</b>	<b>weight</b>	<b>location</b>	<b>roasternotes</b>	<b>blend_single</b>	<b>roastlevel</b>	<b>classification</b>	<b>flavornotes</b>	<b>extra</b>
0	71 House	Irving Farm	This signature House Blend was crafted as the ...	\$14.75	12 oz.	New York, NY	Our signature House Blend was created as the h...	Blends	Medium Roast	Sweet & Smooth	A traditional base with hints of Milk Chocolate...	['Process', 'Washed', 'Varietal', 'Bourbon', 'Ca...']
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# FROM BEAN TO CUP... HOW I GOT MY DATA

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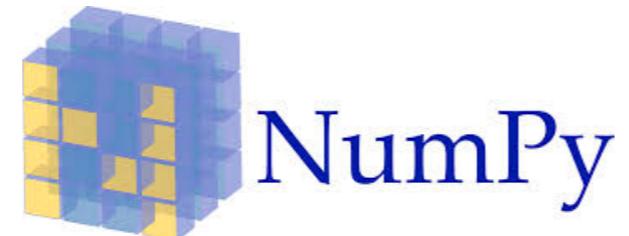
Scrape the Web Page



Clean Data

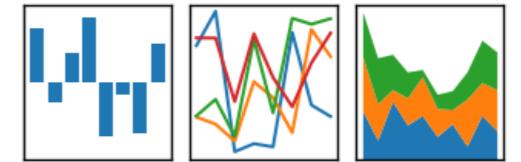


Analyze and Visualize Data



pandas

$$y_{it} = \beta' x_{it} + \mu_i + \epsilon_{it}$$

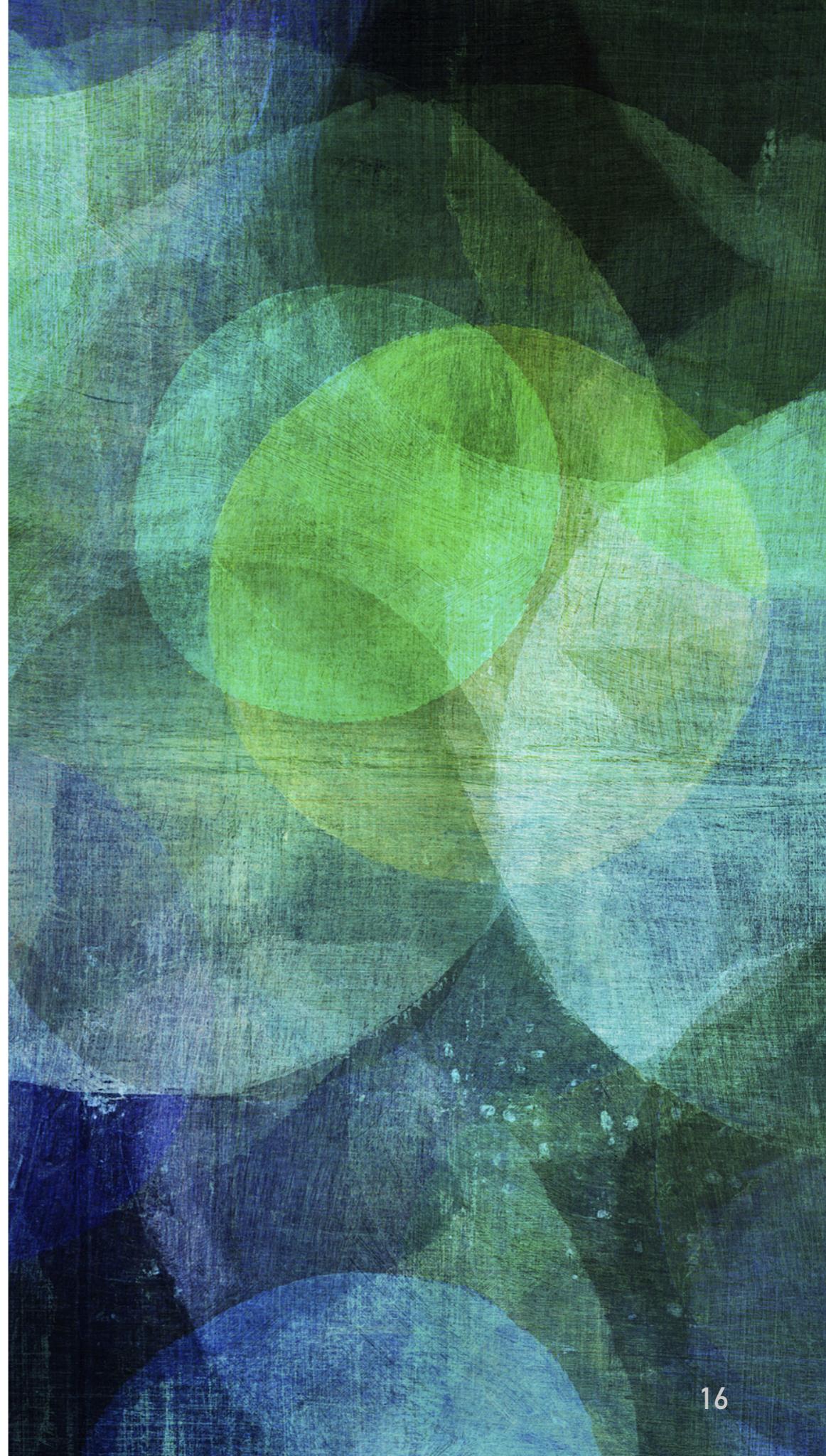


- Look for patterns, relationships
  - Single Origin vs Blend
- Average, max, min product price
- Create plots and charts
- NLP analysis on descriptions, flavor profile

# WHAT'S THE BUZZ

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*What did we find about Trade?*



# COFFEE PRICES

- 51 Roasters
- 39 Cities
- 14 Classifications
- 261 Single Origins
- 209 Blends

Most Roaster S	location	
Oakland, CA	3	
Seattle, WA	3	
Chicago, IL	3	
Portland, OR	2	
Philadelphia, PA	2	
New York, NY	2	

Most Beans	beans	
Chicago, IL	33	
Lancaster, PA	28	
Philadelphia, PA	26	
Seattle, WA	25	
Denver, CO	21	
New York, NY	20	

*Brew Recipe (1:15 ratio):*

*20 g freshly ground coffee*

*300 mL water*

\* *Yield: 250 mL of great tasting coffee*



28

# COFFEE PRICES

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- 51 Roasters
- 39 Cities
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*Brew Recipe (1:15 ratio):*

*20 g freshly ground coffee*

*300 mL water*

\* *Yield: 250 mL of great tasting coffee*

*Most expensive*



PASSENGER  
COFFEE ROASTERS  
  
GESHA VILLAGE  
GORI GESHA LOT 2  
GESHA - ETHIOPIA  
DRY PROCESS  
  
GRAPE  
DRIED APRICOT  
CLEMENTINE  
  
NET WT 10 OZ  
(285g)

**Fruity & Crisp**

**PASSENGER**  
**Gesha Village 2016 Dry Process**  
\$85.00 | 10 oz.

*\$ 85.00 for 10 oz.*

*\$ 6.00 per cup*

*Least expensive*



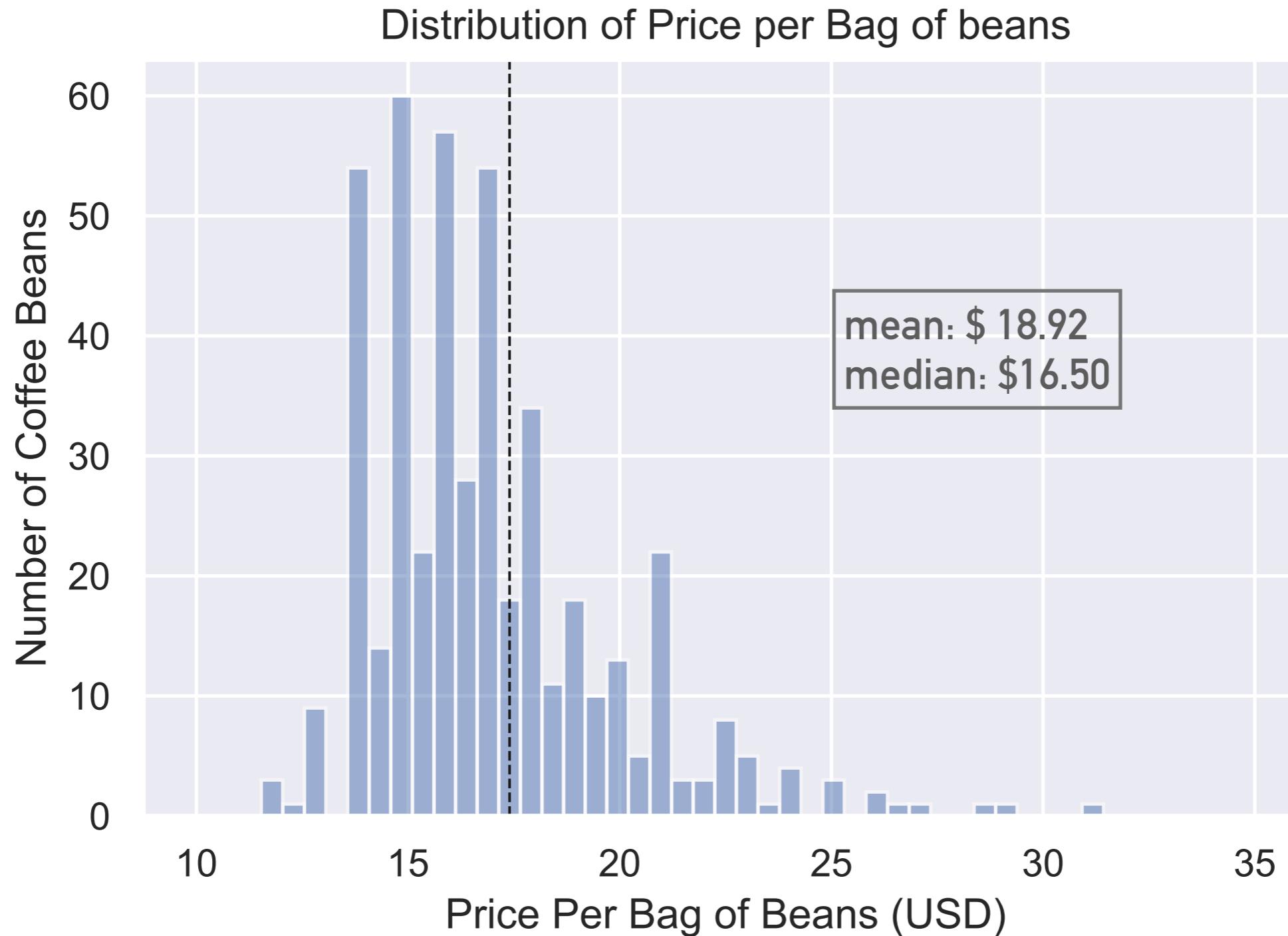
ANODYNE  
Milwaukee Rockstar Blend  
\$14.45 | 16 oz.

*\$ 14.45 for 16 oz.*

*\$ 0.64 per cup*

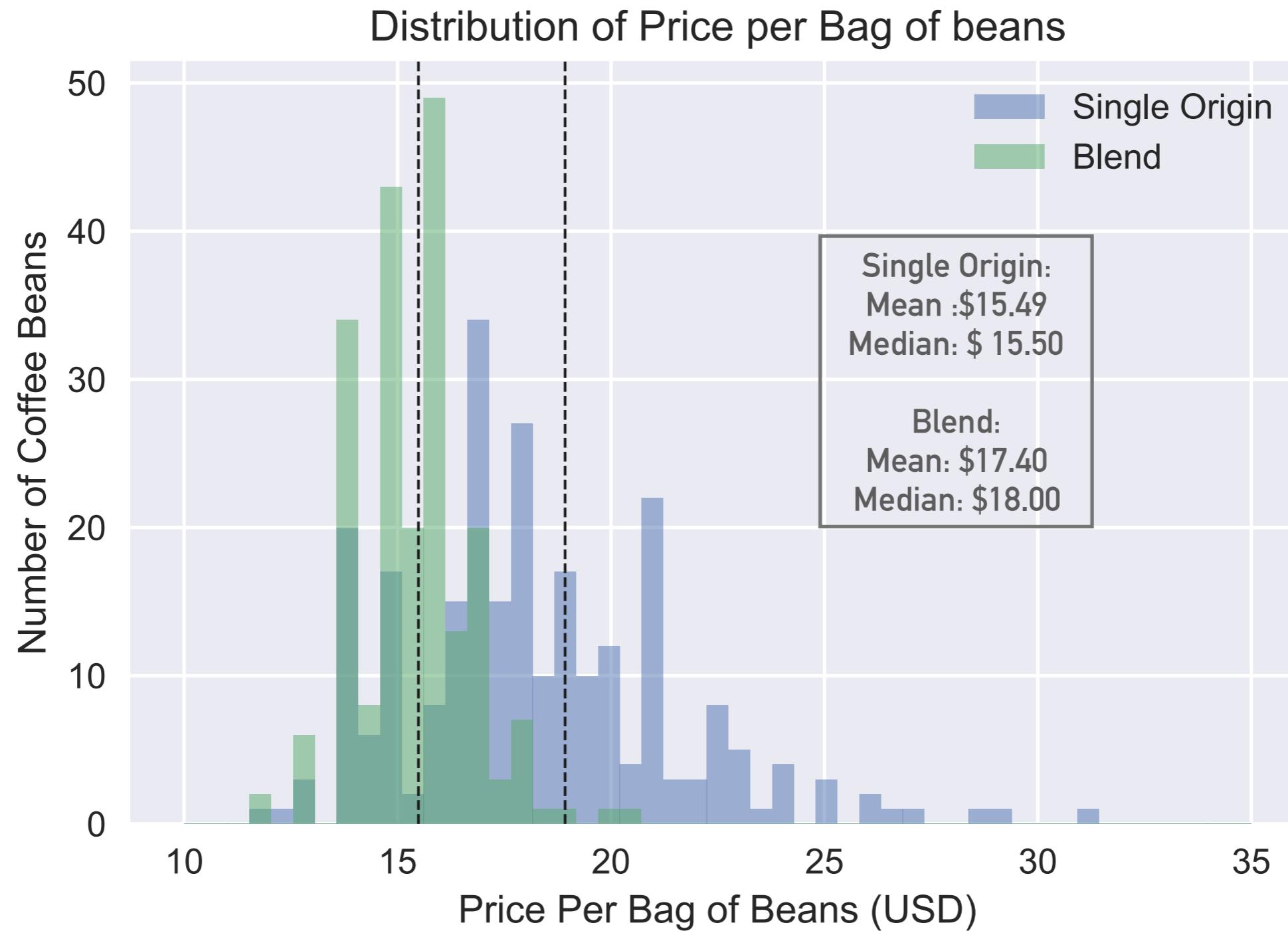
*\*20 g or 0.71 oz. of beans per cup of coffee*

# PRICE PER BAG

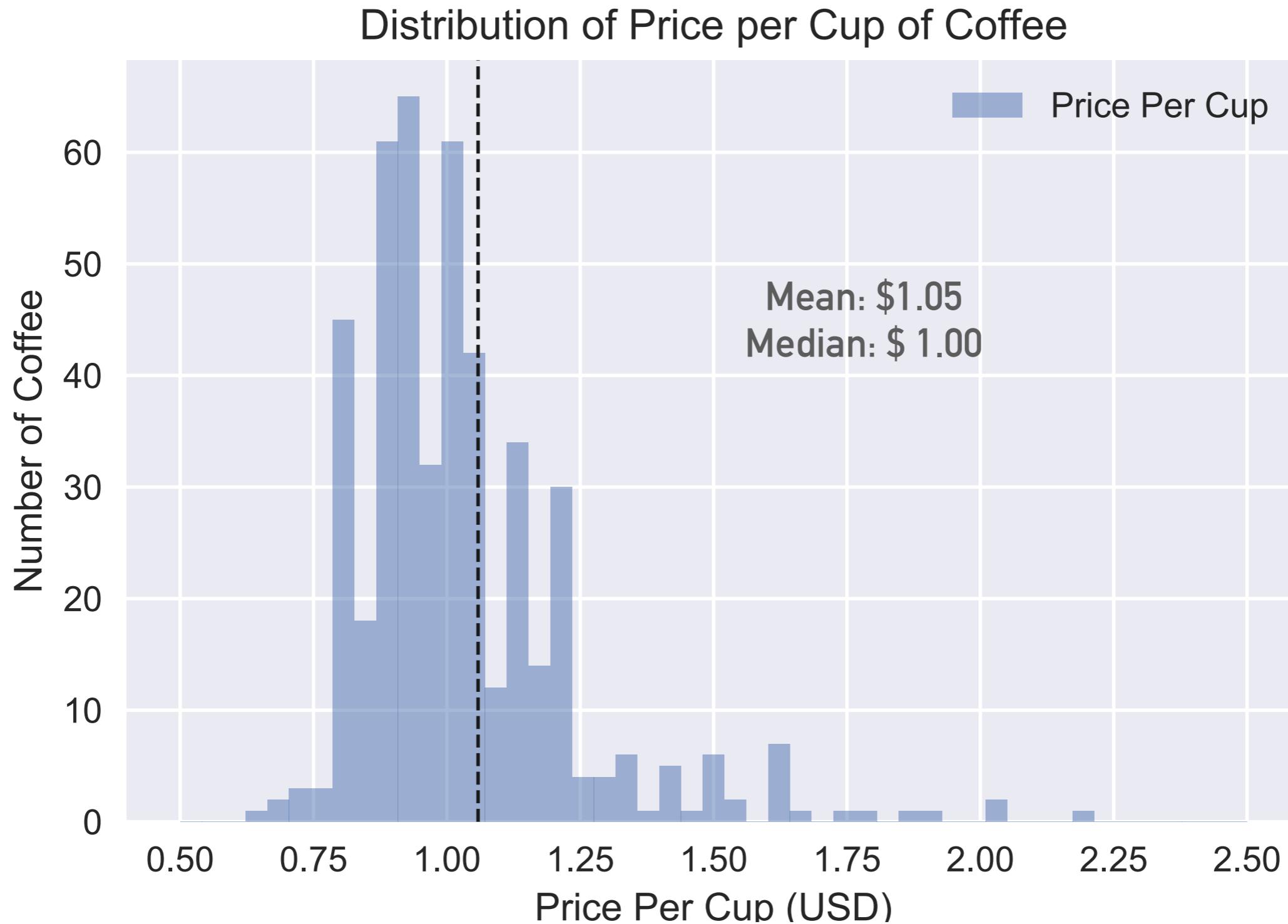


# PRICE PER BAG

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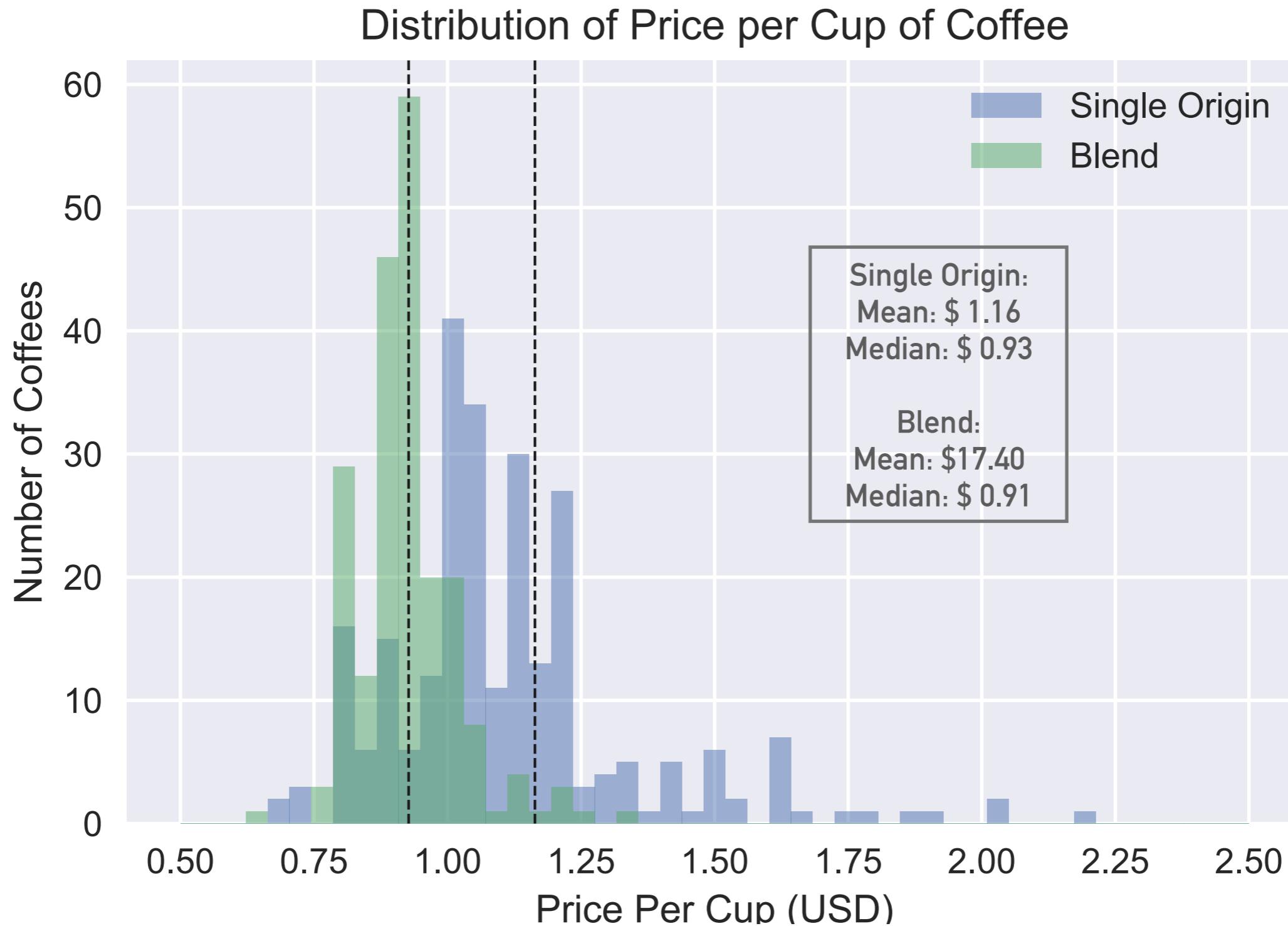


# PRICE PER CUP



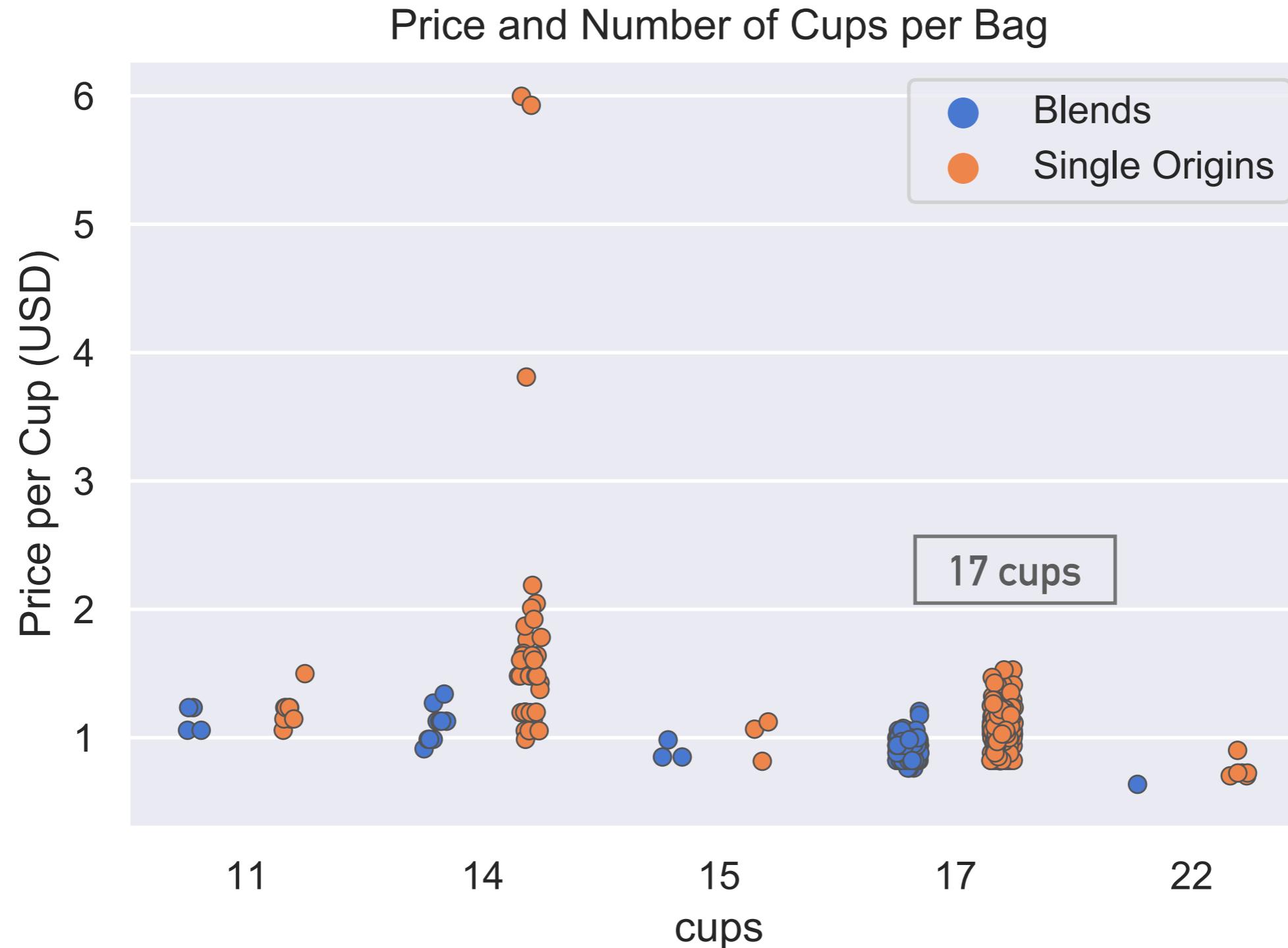
20 g or 0.71 oz. of beans per cup of coffee

# PRICE PER CUP

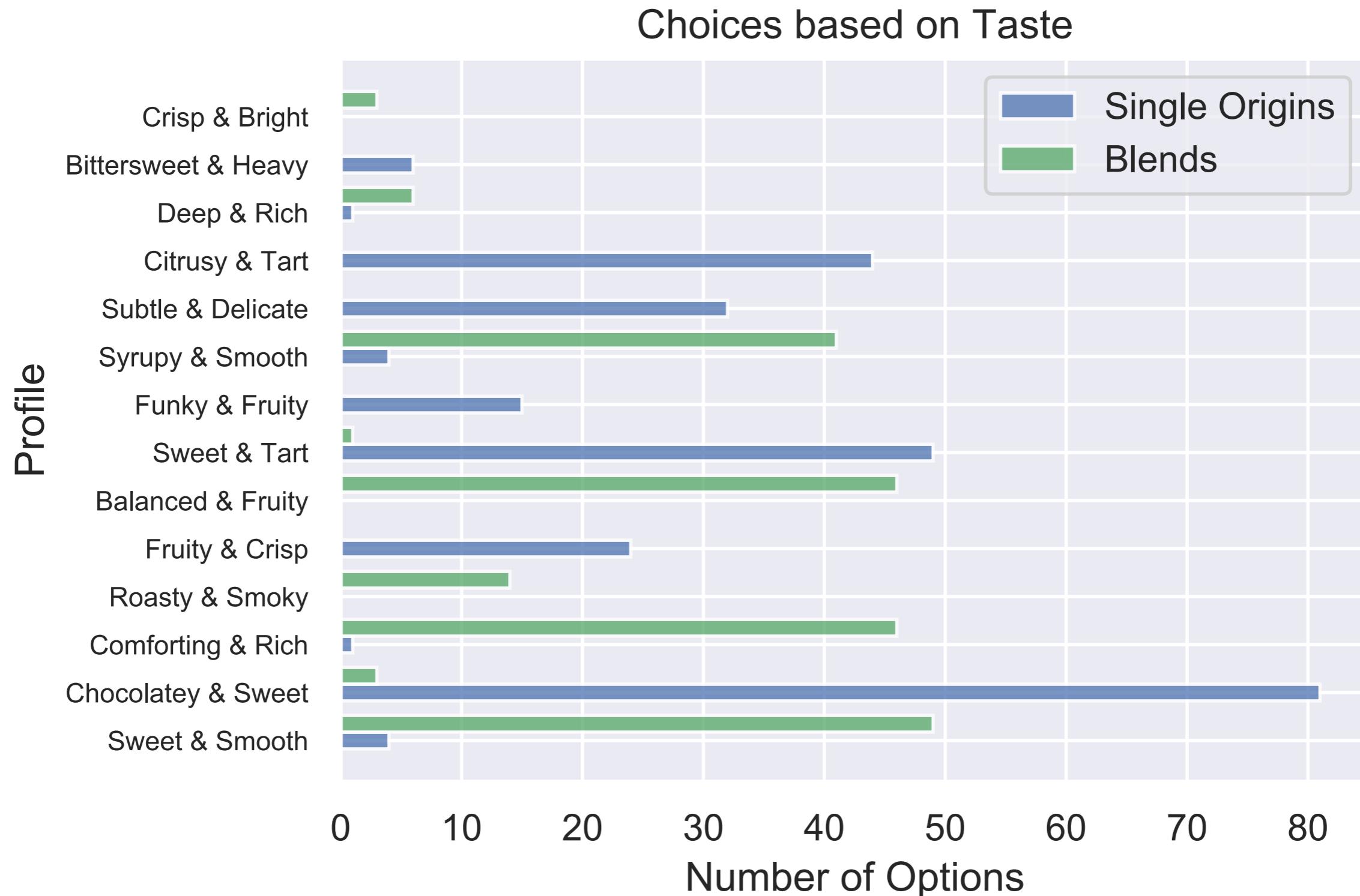


20 g or 0.71 oz. of beans per cup of coffee

# HOW MANY CUPS OF COFFEE CAN ONE BAG MAKE?



# COFFEE CHOICES



# FLAVOR NOTES AND PROFILES

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# FLAVOR NOTES AND PROFILES

# FLAVOR NOTES AND PROFILES

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The diagram is a word cloud centered around coffee varietals and their flavor profiles. The words are arranged in a grid-like structure, with larger words representing more prominent varietals like Caturra, Arabica, and Catuai. Smaller words represent various flavor notes and cultivars. The colors of the words vary, with purple for Caturra, green for Arabica, and blue for Catuai.

**Catuai Varieties:** Catuai de Changes, Timtim, Kudhume, Indigenous, Catuaia, Pache Varieties, Abana, Local, Tekisic, Anacafe, Mountain.

**Caturra:** Maracaturra, Castilla, Mundo, Peru, Dwarf, SL34, Native, Tino.

**Arabica:** Caturra, Catuai, Sarchimor, Villa, Catual, Angel, null, Garuda, Gesha, Carmona, Laurina, Maragogype, HeirloomElevation, Jember.

**Bourbon:** Ruiru, Jamaica, Catlai, Raymond, St, S795, Dega, Ethiopian, Molisho, Linie, Brasil Cultivar, Caturra Colombia, Caturra, Sidra, Setami, Icatu, Ruirilli, Latua Blue, Parainema, Red, Mondo, etc, Hibrido, Tim.

**Pacamara:** Maragogipe, El.

**Mixed:** SL Novo, Catimor, Verde, Sarchi, Landraces Bourbon, Multiple, Varies, Estate.

**Heirloom:** Pacas, Mikicho, Gathaithi, Topazio, SL24.

**Various:** Laurina, Maragogype, HeirloomElevation, Jember.

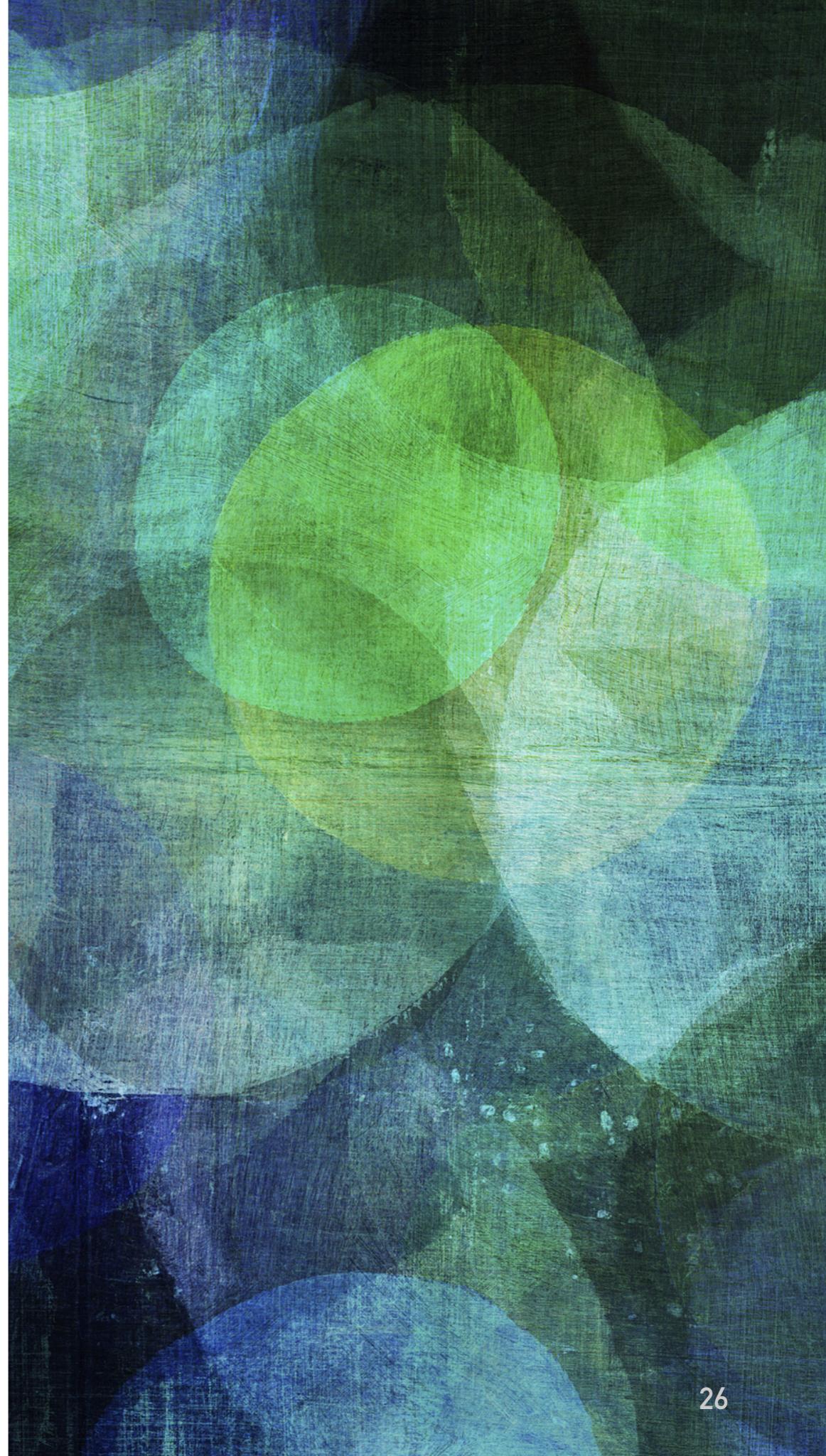
**Other:** Catuai, Caturra, Arabica, Catuai, Various, Laurina, Maragogype, HeirloomElevation, Jember.

# FLAVOR NOTES AND PROFILES



# END NOTES

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# SOME INSIGHTS AND CONCLUSIONS

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- Home brewing is a cost-effective way of enjoying coffee.
- Trade has a wide variety of coffees for all types of home brewers.
- Those into craft coffee can find the latest offerings from different roasters across the country.
- From budget friendly options to limited selections.
- Didn't take into account shipping...  
Free shipping when you spend \$50.00

# NEXT STEPS...

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- Trade changes its inventory regularly.
- It might interesting to see trends in the products they offer.
- Take a closer look into the specific details of products in addition to price points.
  - Trends on varietal, origin, sub region
  - Roasters

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Questions? Comments?

Thank you!