



Viticulture or Pop Culture?

CULTURAL FACTORS IN THE CALIFORNIA WINE MARKET
(2003 - 2024)

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- 03** Overview
- 04** Data Question
- 05** CASE STUDY:
The “*Sideways Effect*”
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Grape Investment
- 08** Questions



About Me



- 01 Wine sales professional
- 02 Creative vision, analytical precision
- 03 Show me the numbers!

Primer



01

California wine is a massive global market, going as far back as the 1800s

02

Different varieties have different characteristics and perceptions

03

Preferred varieties drive the market and influence market trends

04

Every year since the 1990s, the state of California and the USDA produces a grape acreage report in Excel detailing changes by county and variety

Detailed data as far back as the 1970s

Overview

Terminology

01

Bearing Acreage

Marketable (mature vines)

02

Non-Bearing

Plantings (immature vines)

03

Total Acreage

Overall Investment (total vines)

Vines need **3-4 years** from planting to bear fruit

Mature vines produce grapes for **25-30 years**

Variables

01

Acreage

02

Variety

Cabernet, Chardonnay, Pinot Noir, Merlot

03

Years

2003-2024

04

Google Trends API

Proxy for Consumer/Cultural Engagement

Region: US for all data

Metrics

01

Acreage % or Value

Increase/Decrease

02

Search Frequency

0-100, 0 being no searches

How has wine acreage changed over the past 21 years in California, and could cultural events be a factor in changes?



Broad Analysis



Overview



2004

Release of *Sideways*

Bearing

875,111 | **938,205**

minimum

maximum

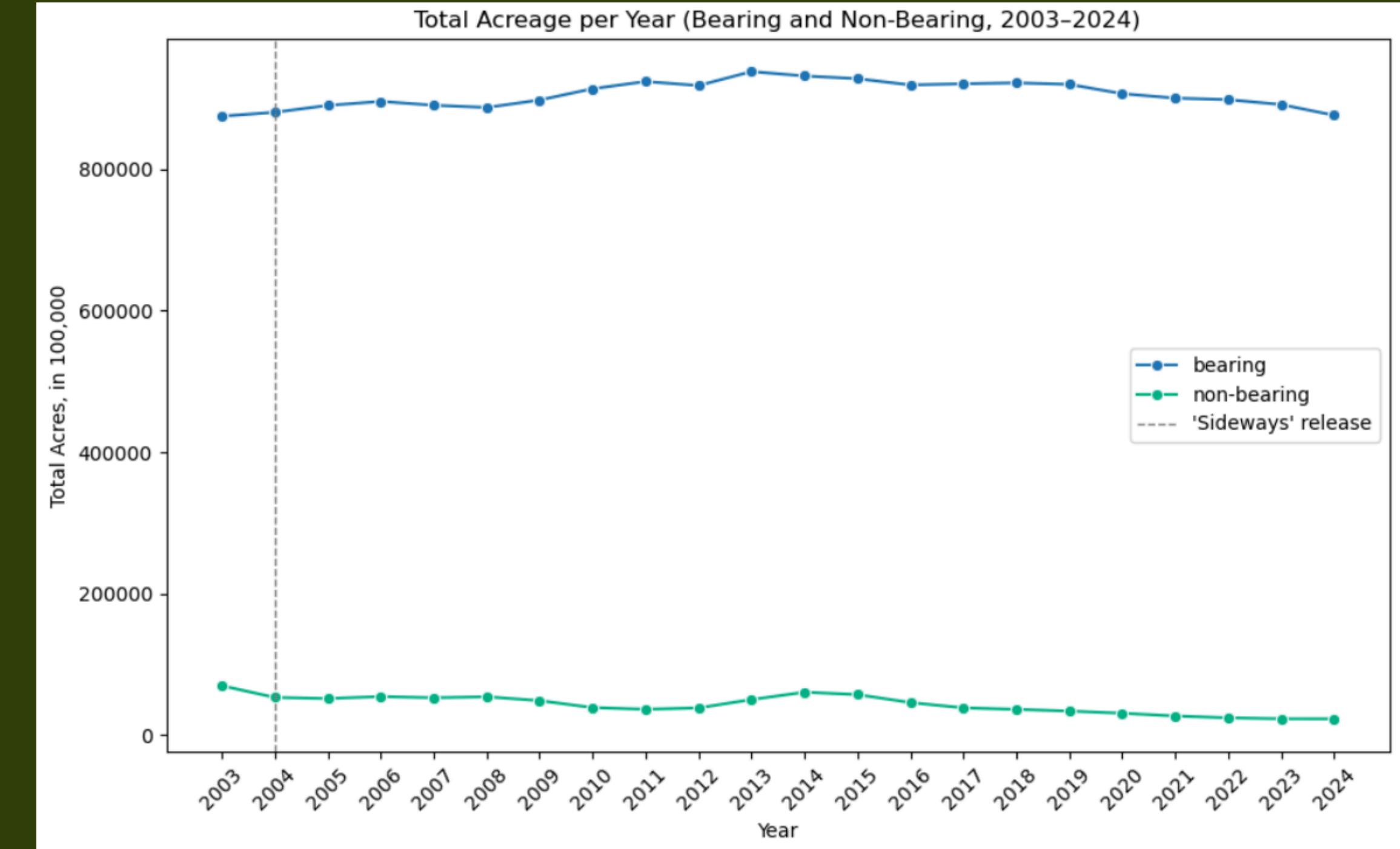
Non-bearing

23,062 | **69,854**

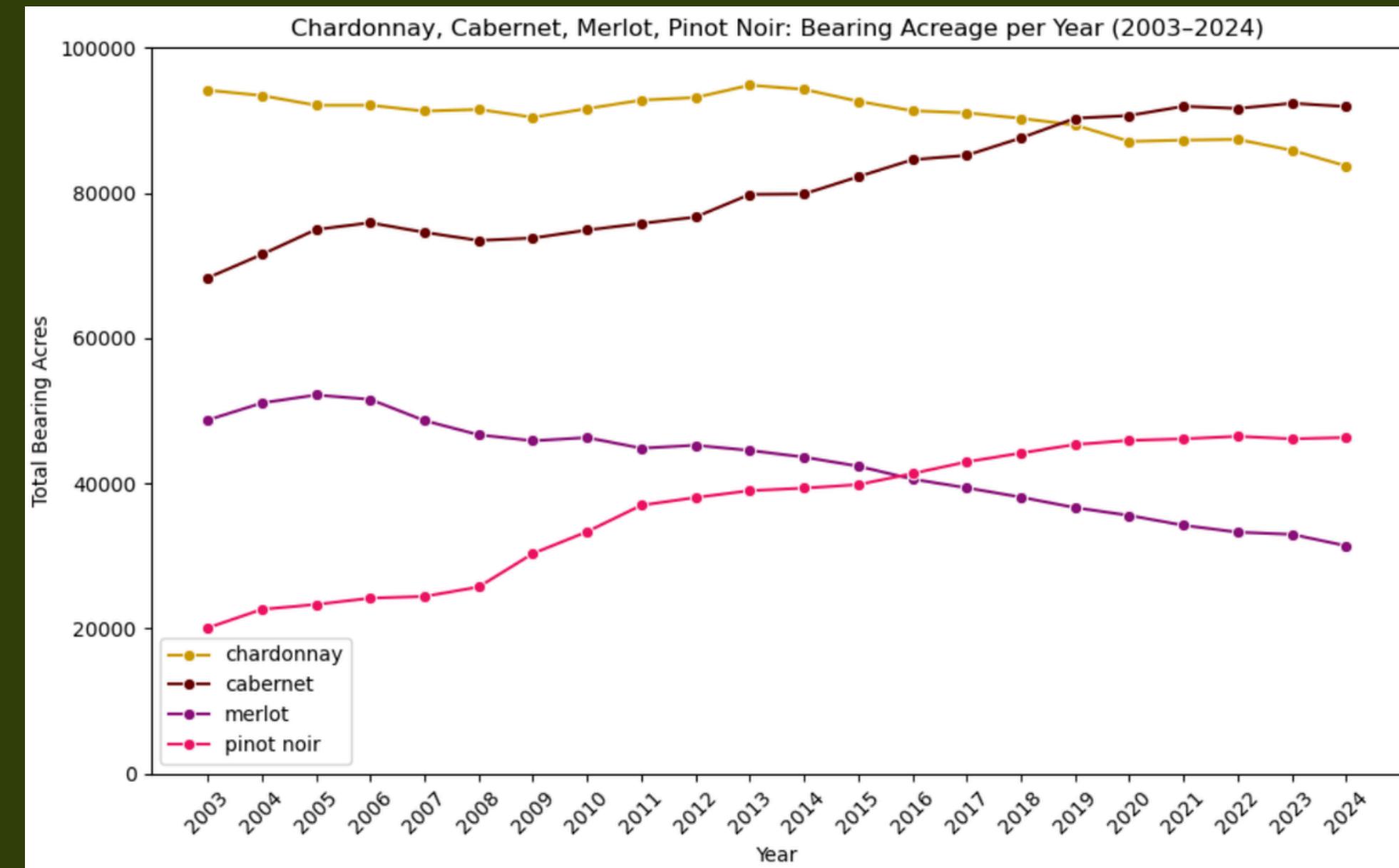
minimum

maximum

Ranges overall are very small, showing stability



Grapes in study, overall Bearing Acreage (200-2024)

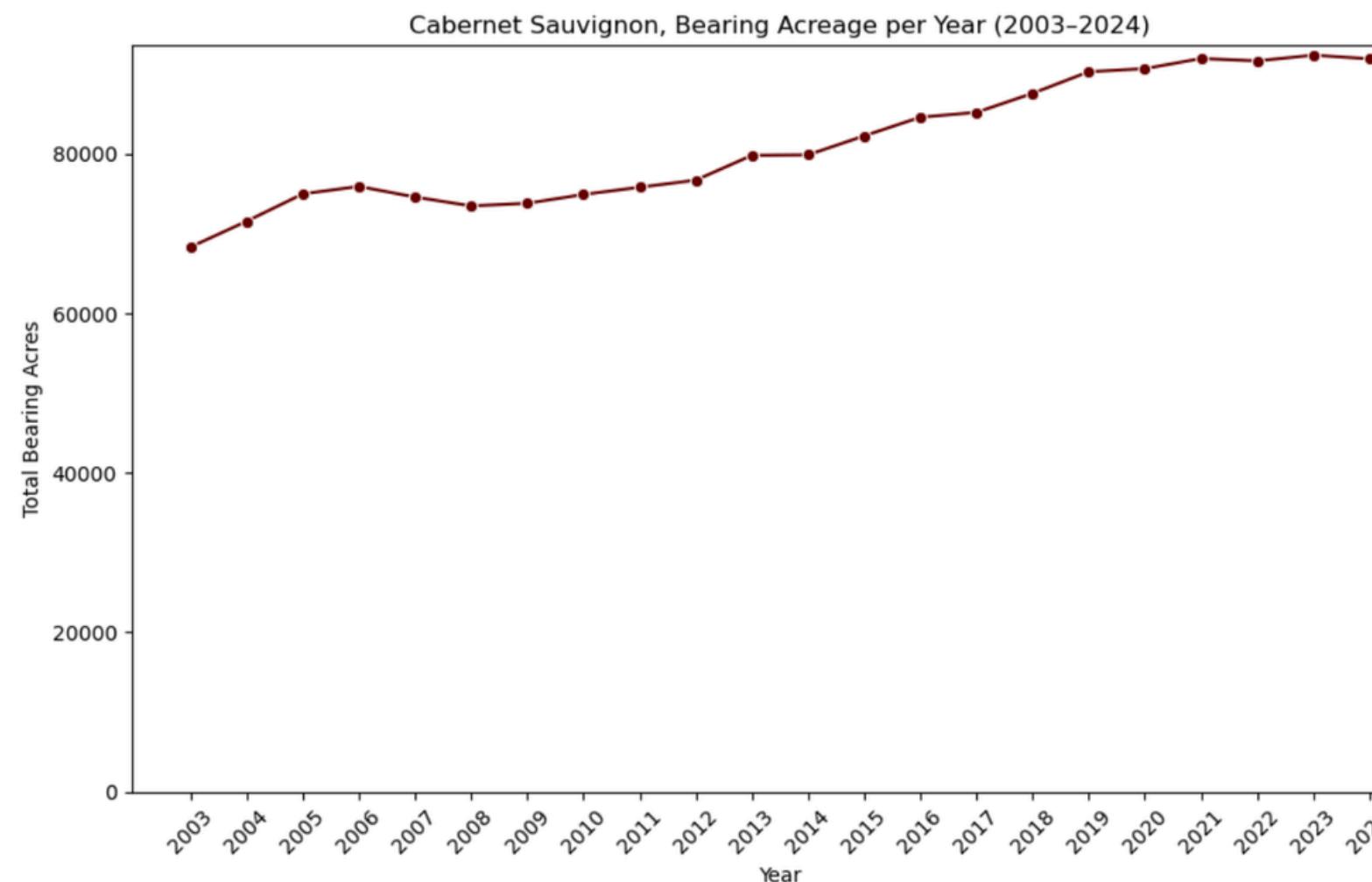


Chardonnay
94,848

Cabernet Sauvignon
87,116

Merlot
44,879

Pinot Noir
42,059



Low Variability

± 1.86%

standard deviation across years

Consistent, Gradual Growth in a Small Range

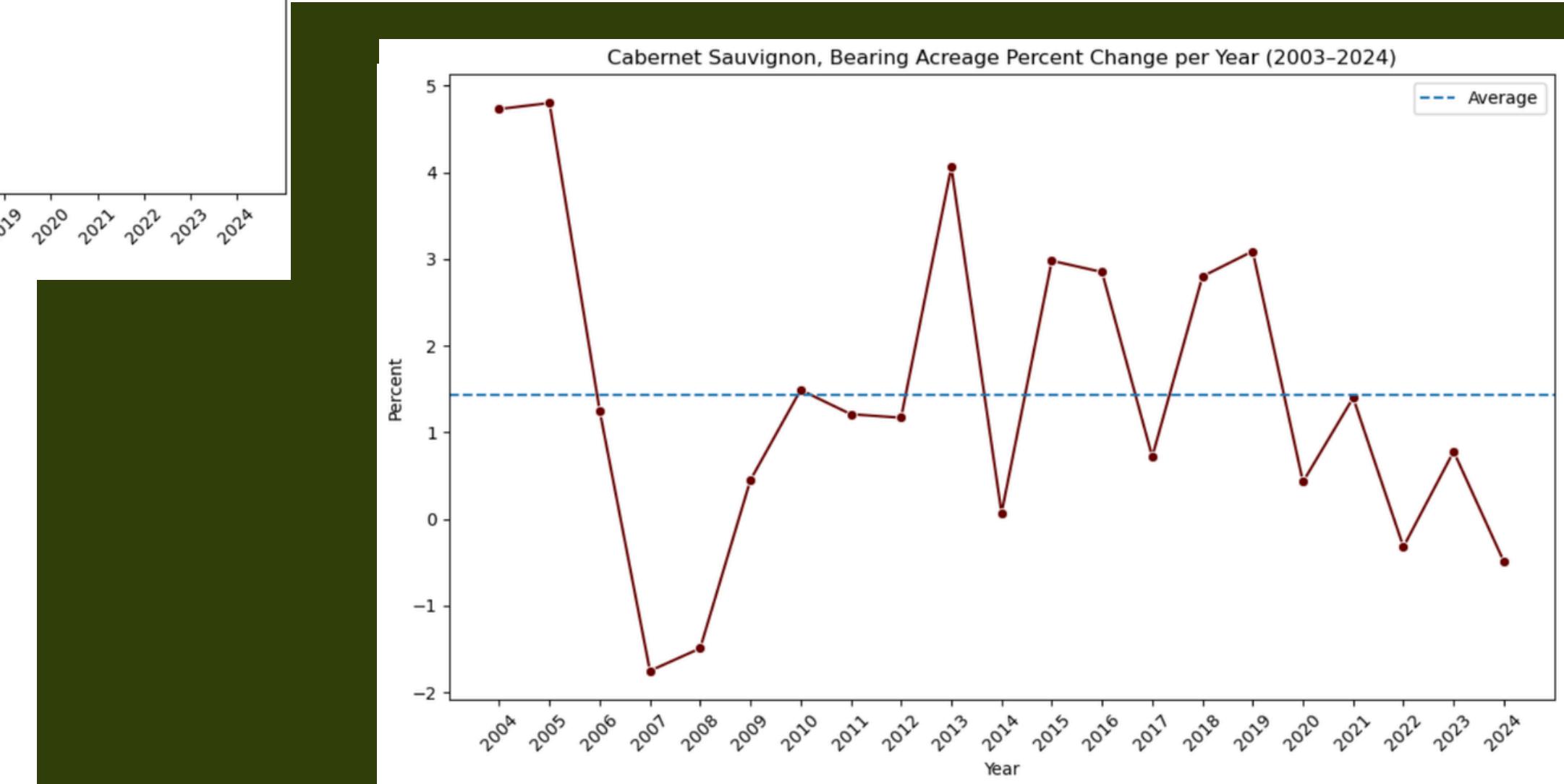
Acres

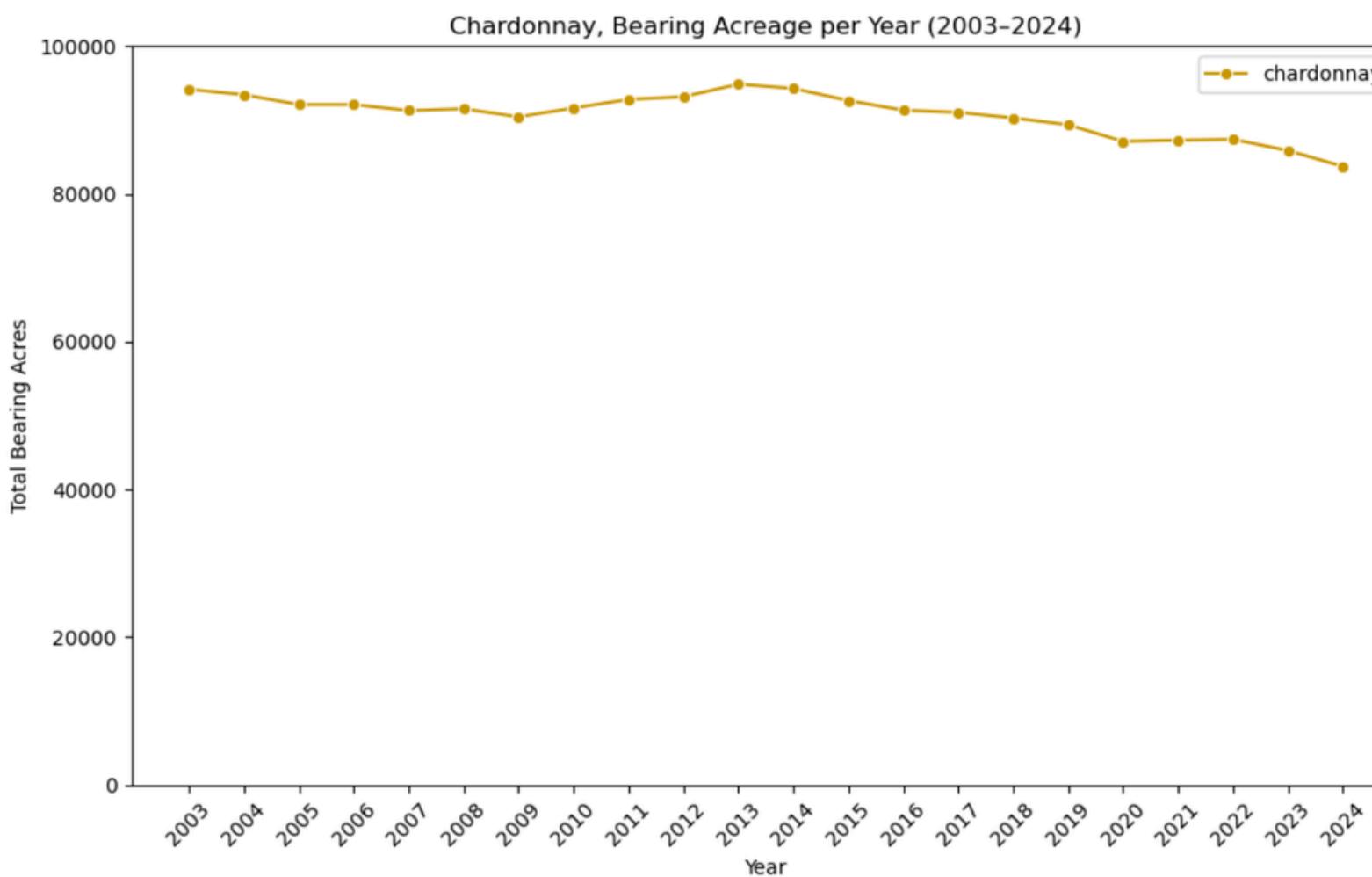
1124

average **increase** per year

Acreage %

1.44%





Low Variability

± 1.19%

standard deviation across years

Consistent, Gradual Decline with Small Range

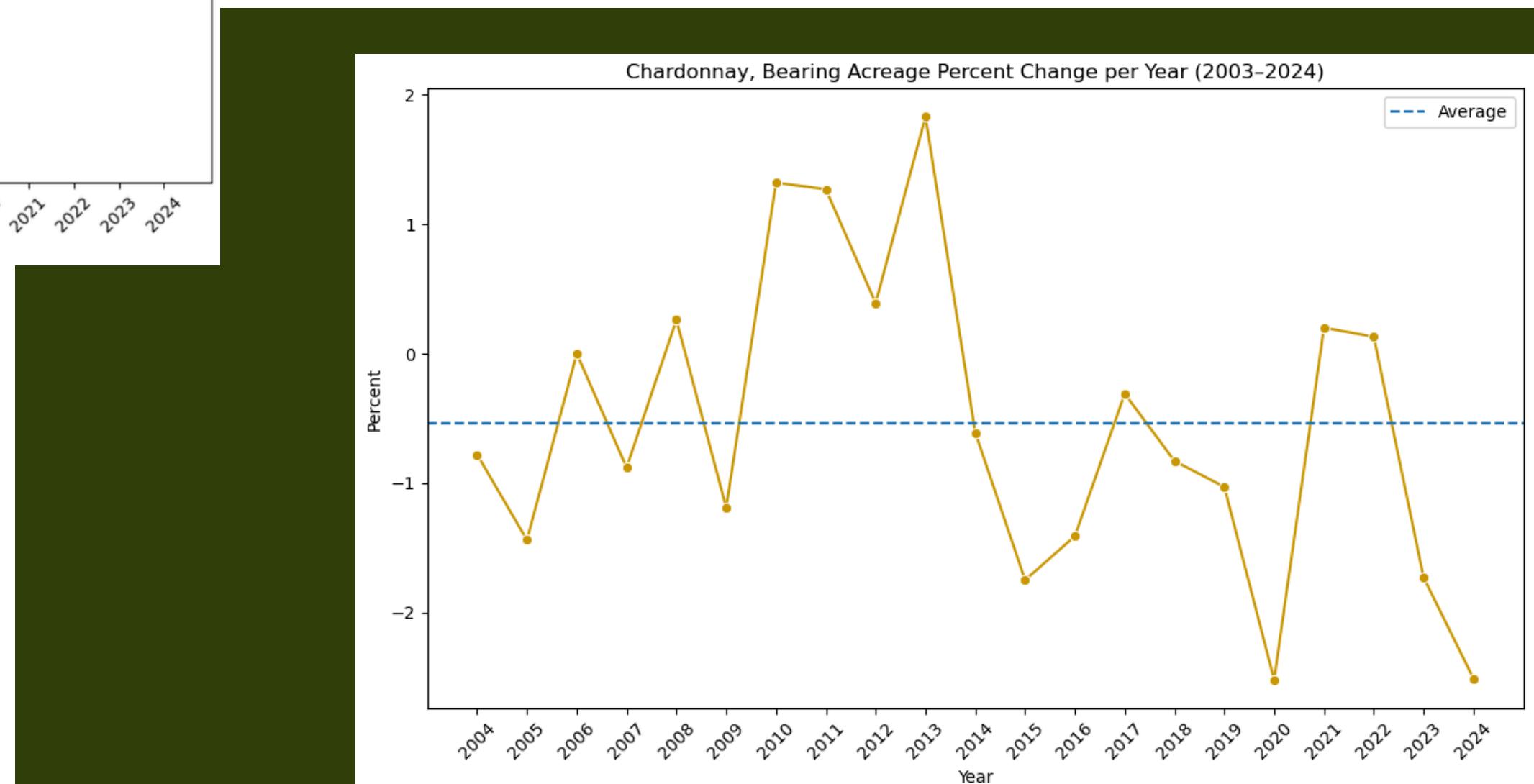
Acres

-497

average **decrease** per year

Acreage %

-0.55%



Chardonnay**29.8**

minimum

64.5

maximum

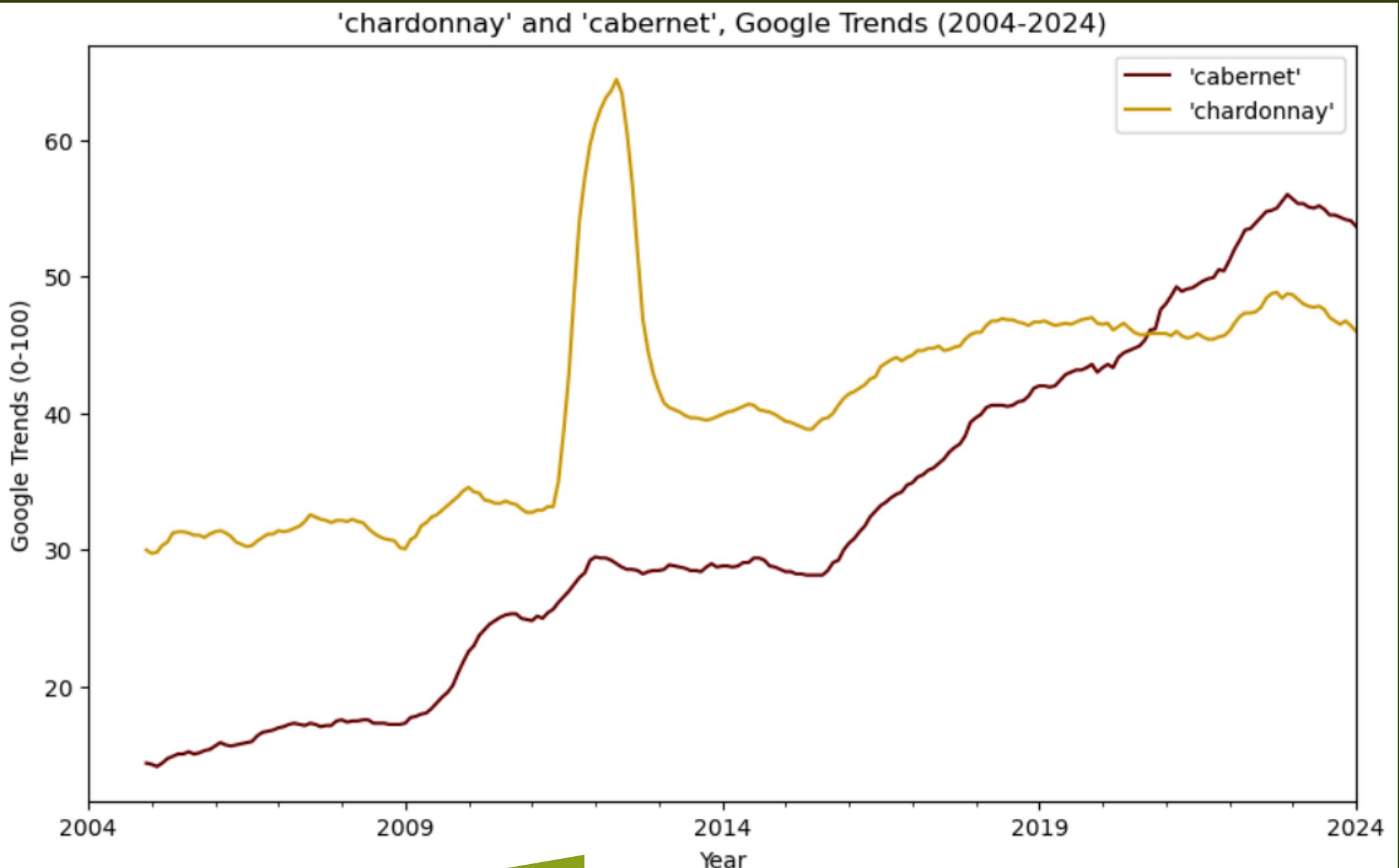
Cabernet**14.1**

minimum

55.9

maximum

Rolling averages used for simplification



2011-2013: Three different songs with “Chardonnay” in the name debut

Deep Dive



Did the movie *Sideways* actually cause Pinot Noir to increase and Merlot to decease?



The “Sideways Effect”

2004

Sideways hits theaters, famously trashing Merlot and complementing Pinot Noir

Analysis

- 01 Online Engagement
- 02 Bearing Acreage Changes
- 03 Comparisons for Context
- 04 Non-Bearing Acreage Changes
- 05 Insights



01

'pinot noir' Engagement Increases Overall...

Pinot Noir**25.5**

minimum

60.2

maximum

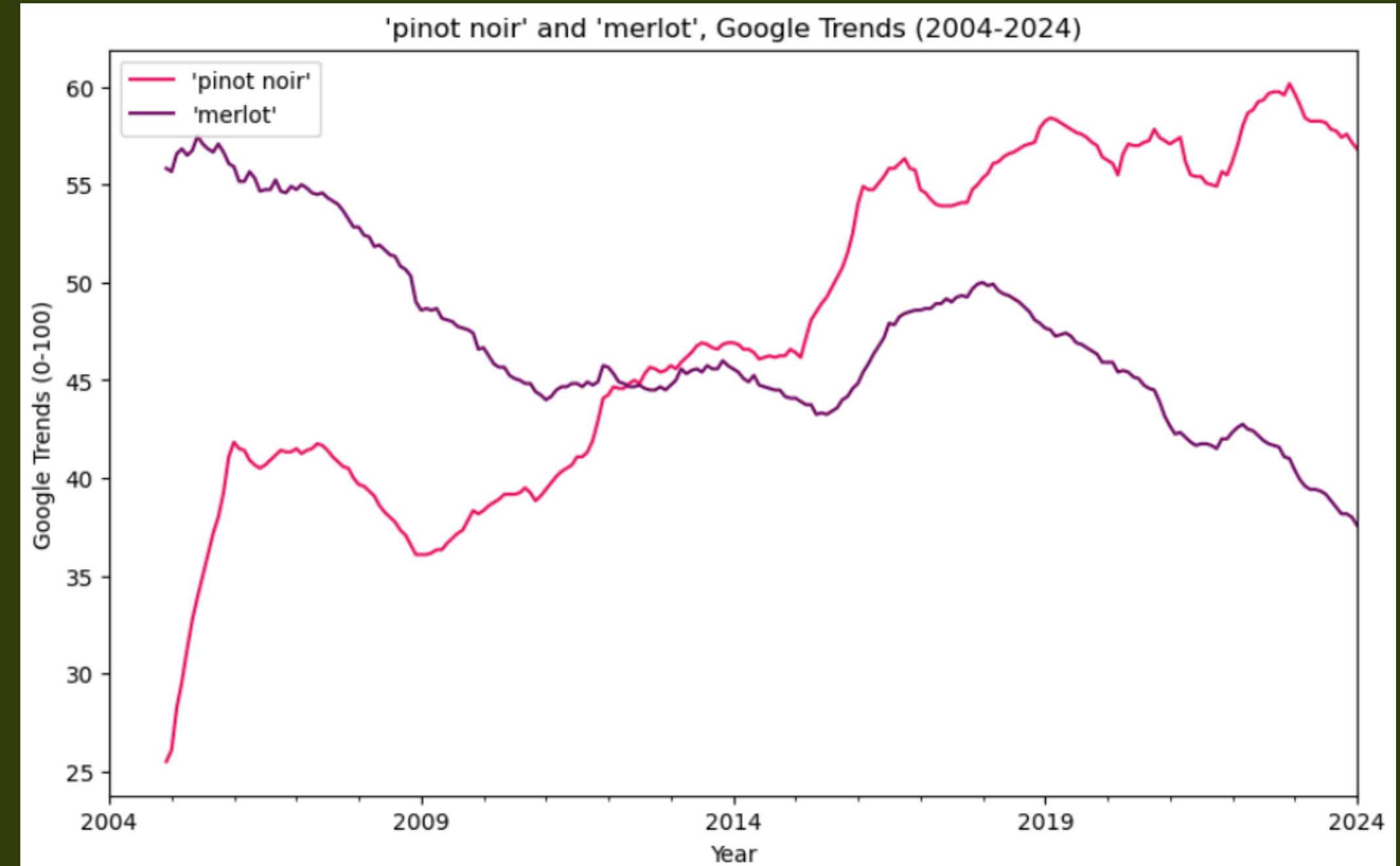
Merlot**37.6**

minimum

57.5

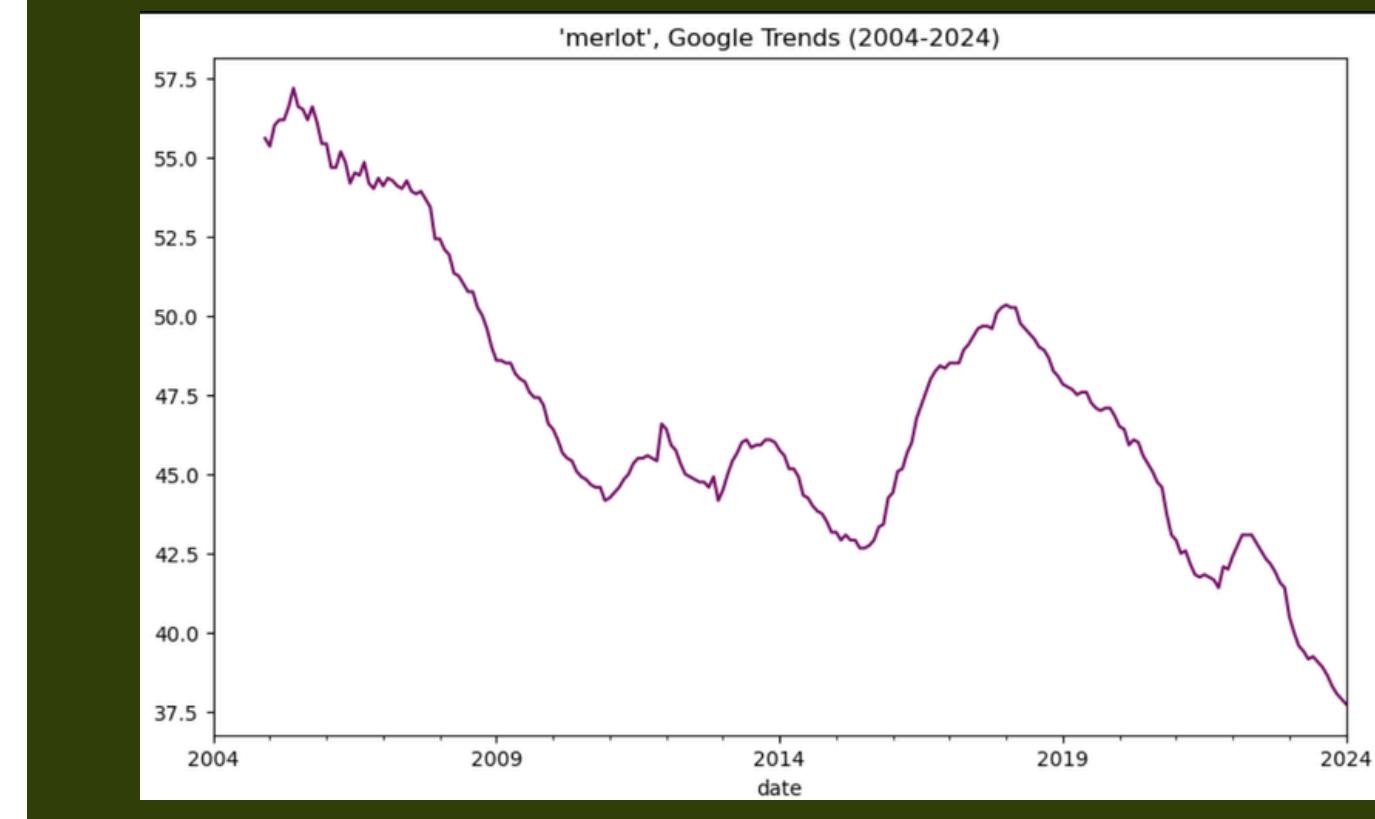
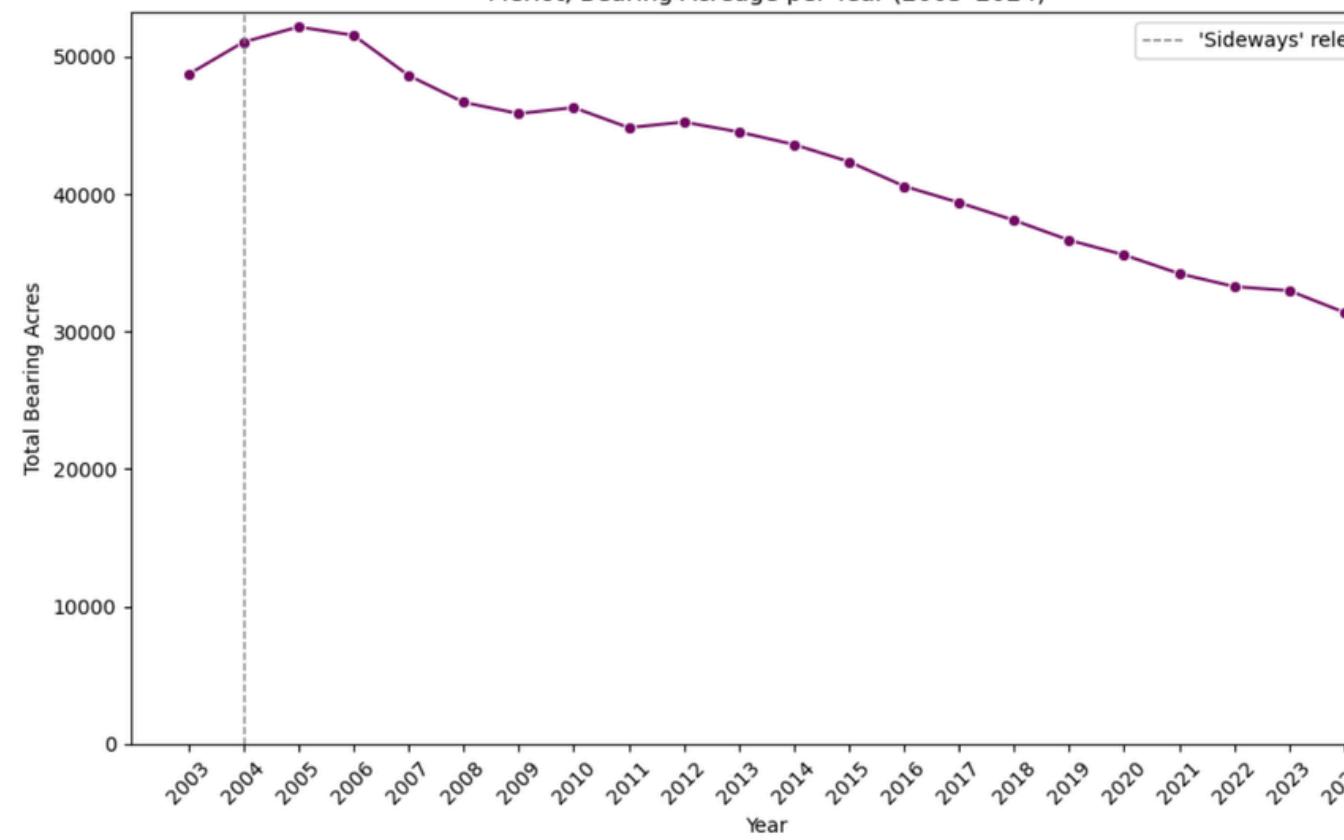
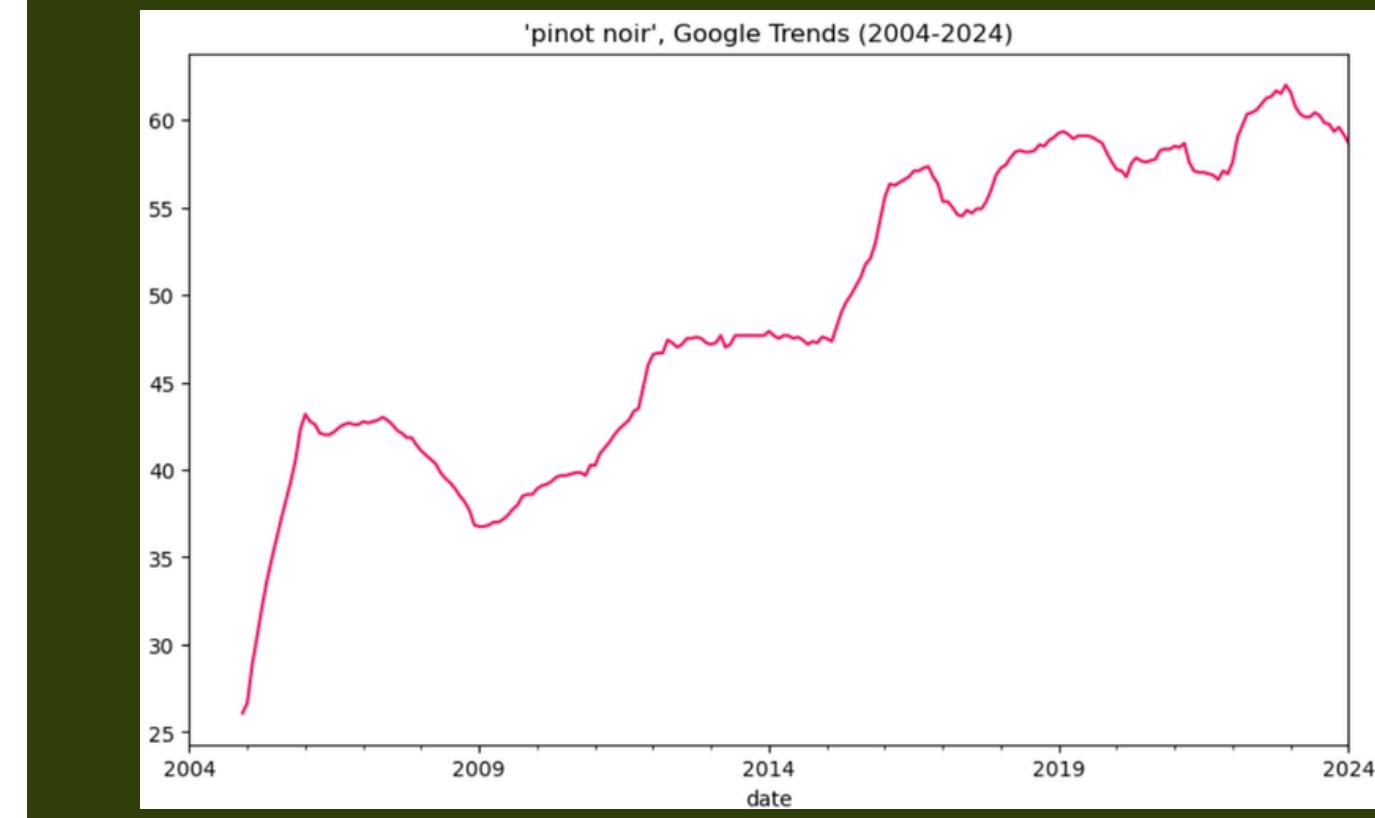
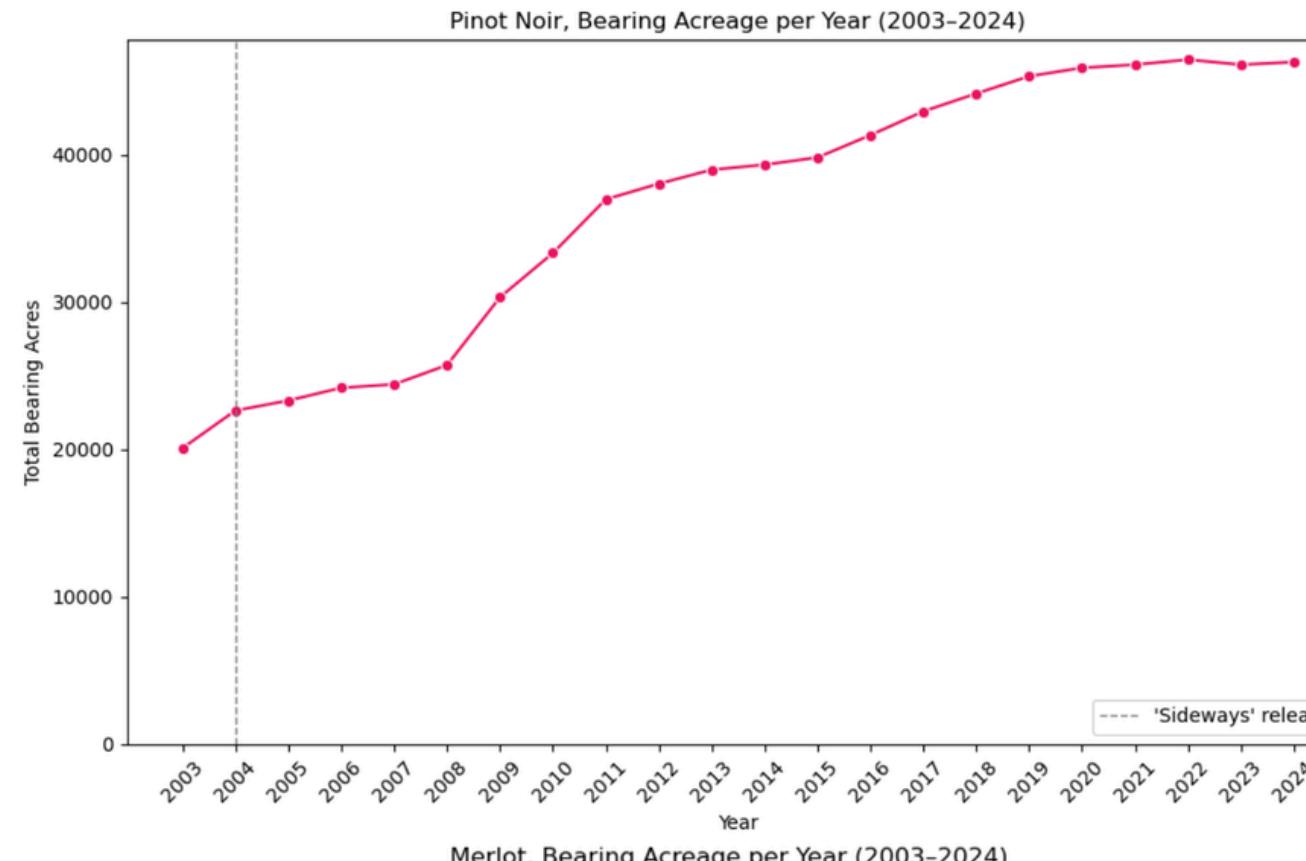
maximum

Rolling averages used for simplification

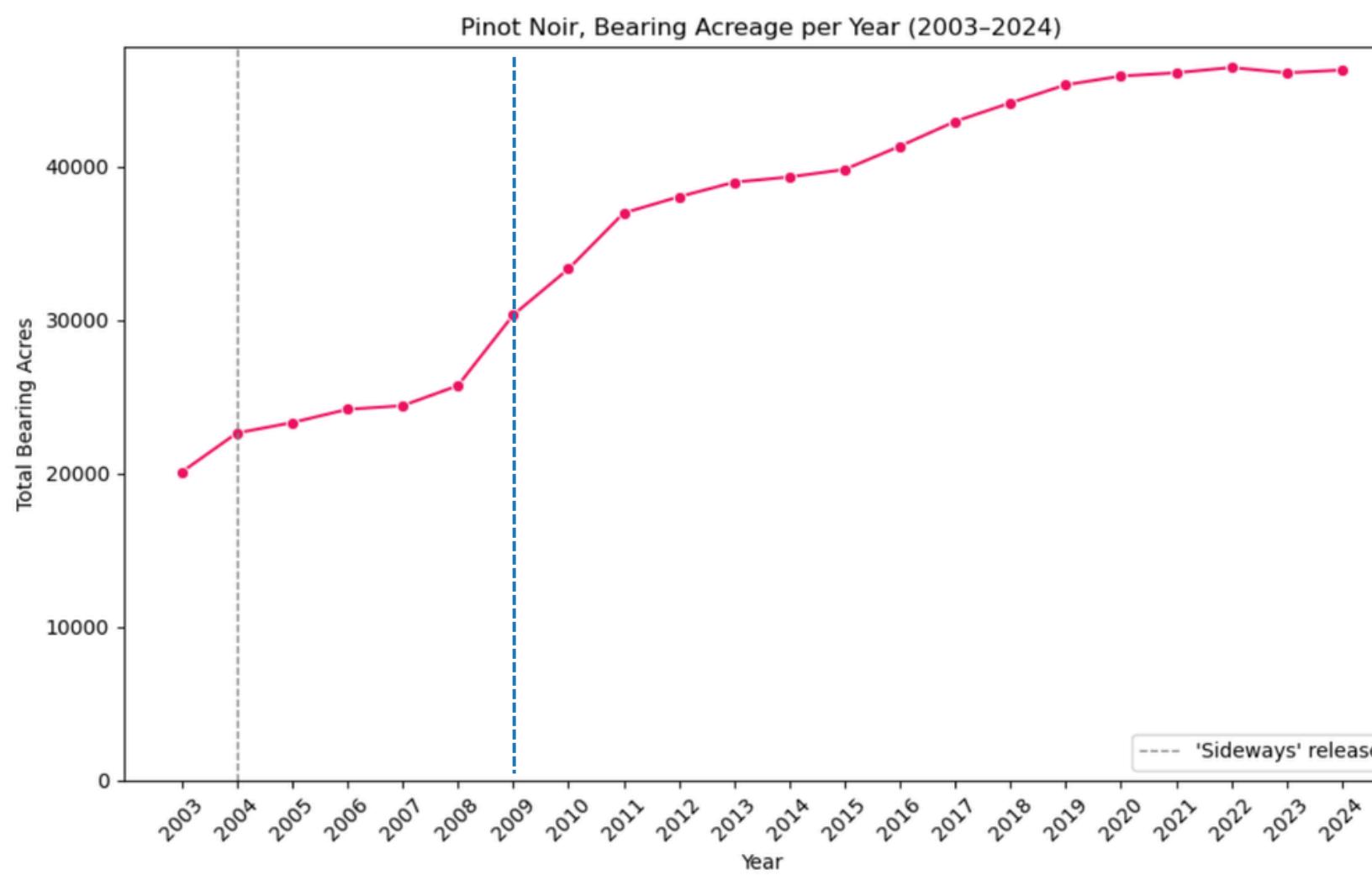


... and 'merlot' Engagement Decreases Overall

Pinot Noir Bearing Acreage Increases Along with Search Frequency...



... and Merlot Bearing Acreage Decreases Along with Search Frequency



Very High Variability

± 4.76%

standard deviation across years

Consistent, Dramatic Growth with Wide Range

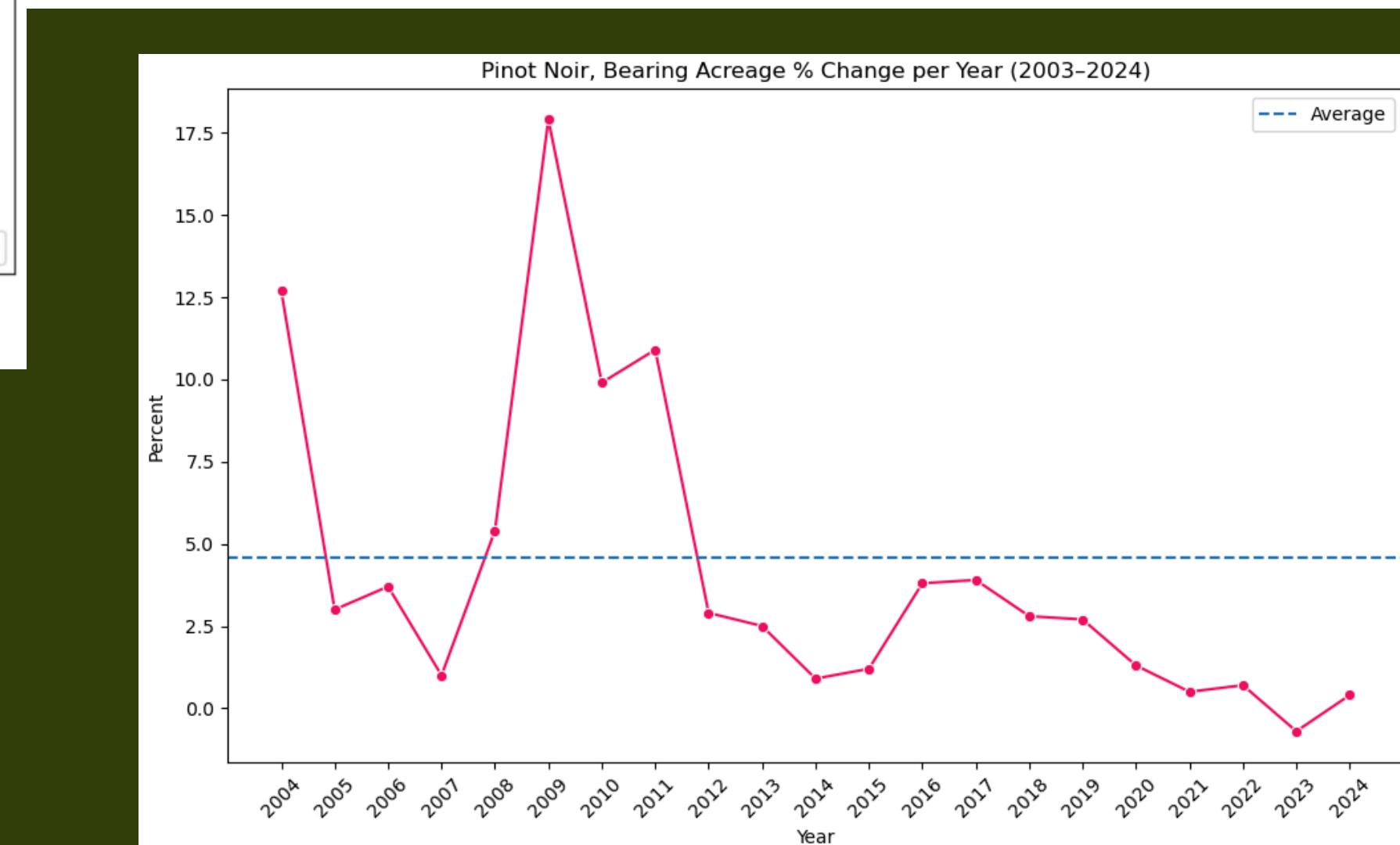
Acres

1229

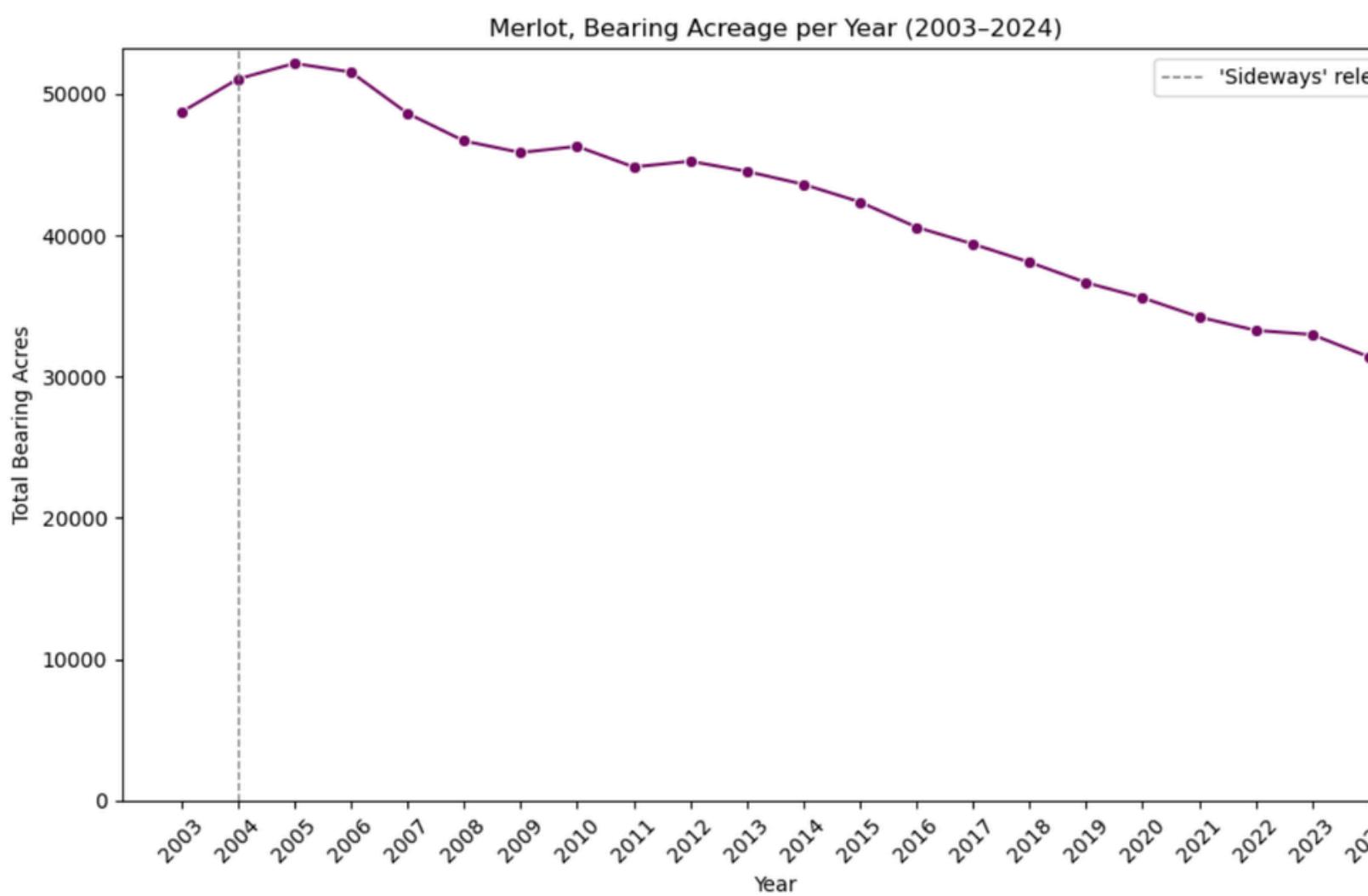
Acreage %

4.16%

average **increase** per year



Merlot, Bearing Acreage Changes



High Variability

± 2.51%

standard deviation across years

Consistent, Notable Decline with Wide Range

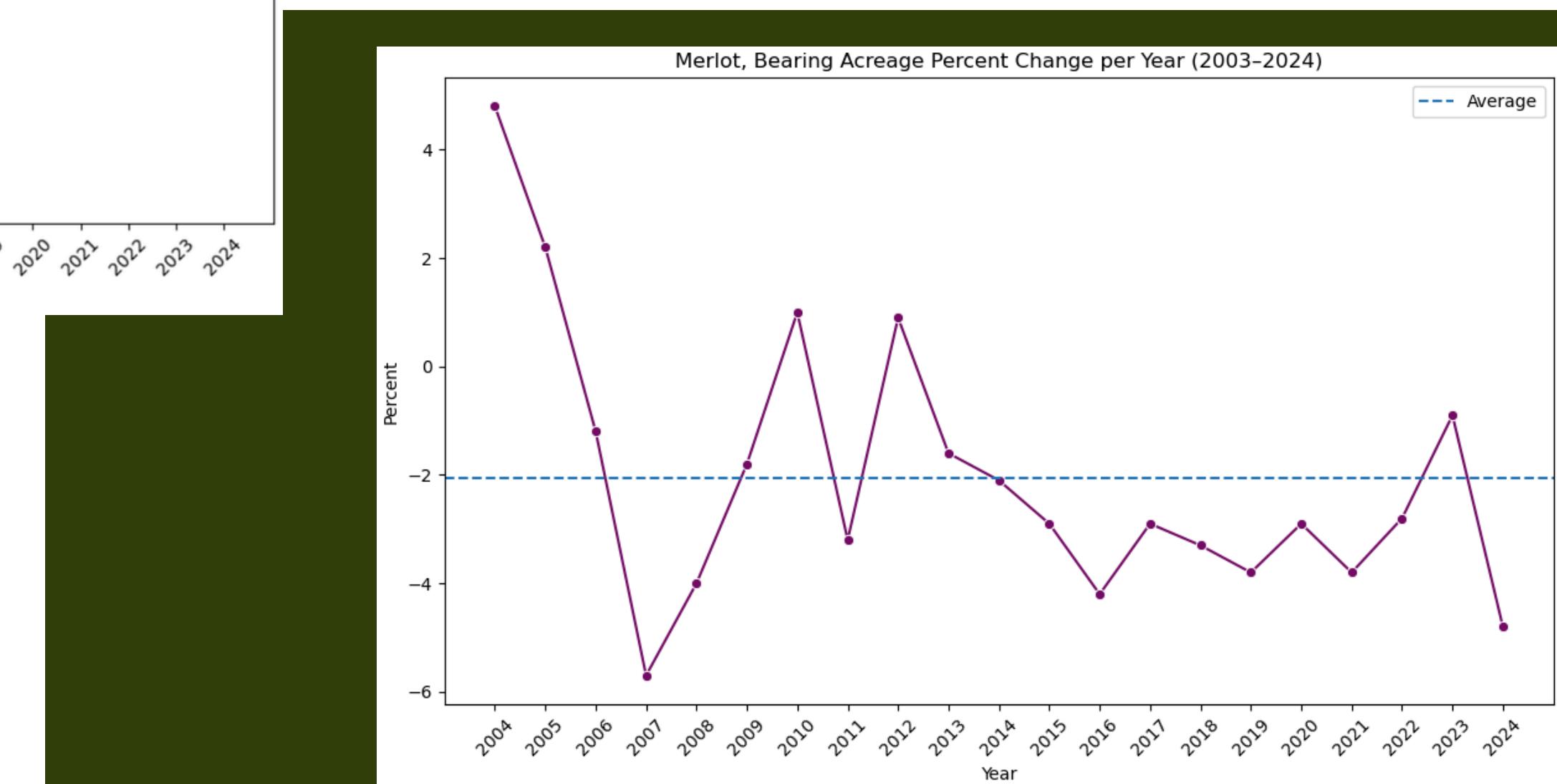
Acres

-825

average **decrease** per year

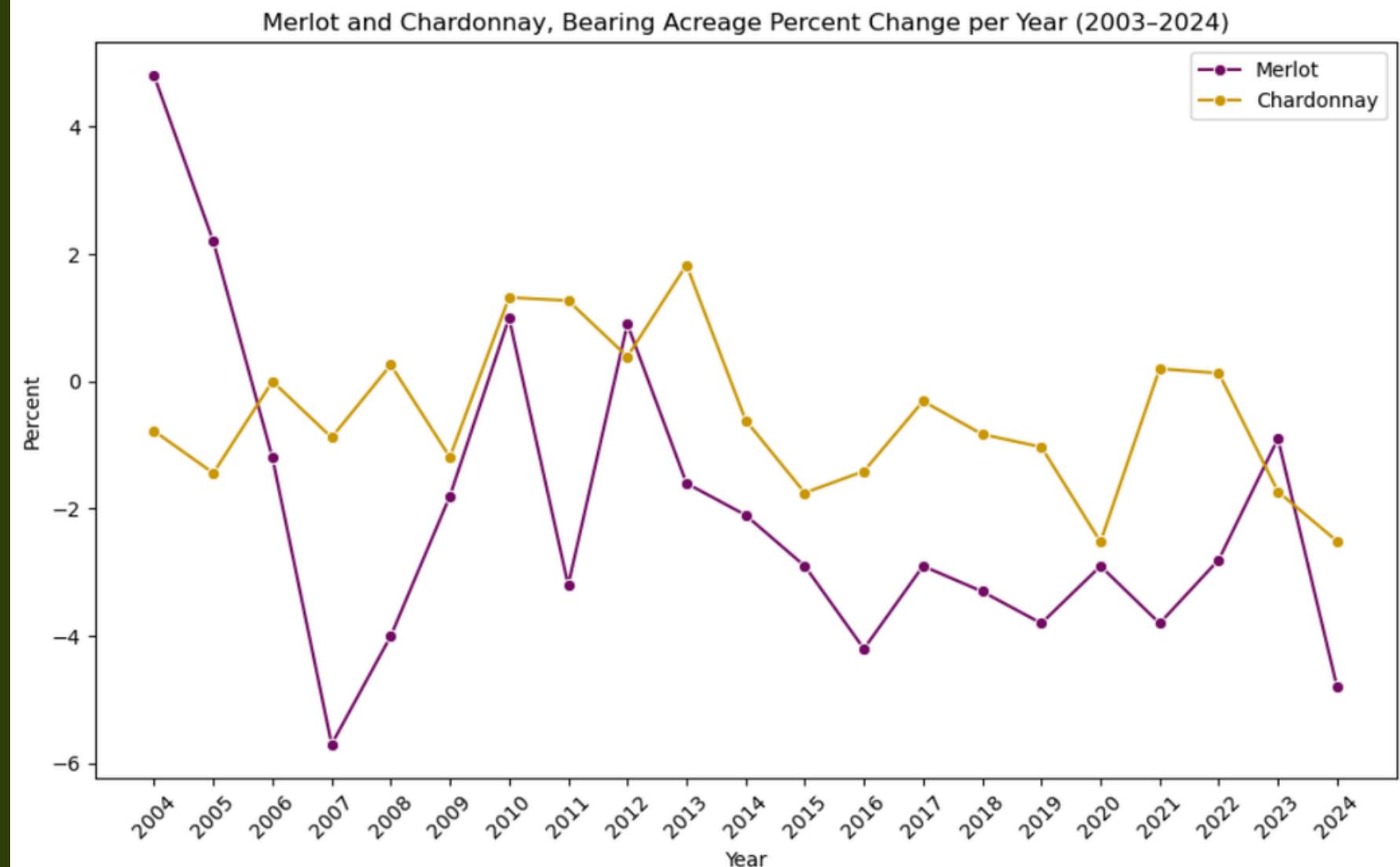
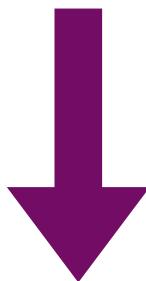
Acreage %

-2%



Merlot, Bearing Acreage Changes (as Percentage)

Merlot



Acres
-825

average **decrease** per year

± 2.51%

standard deviation across years

Acreage %
-2%

Acres
-497

average **decrease** per year

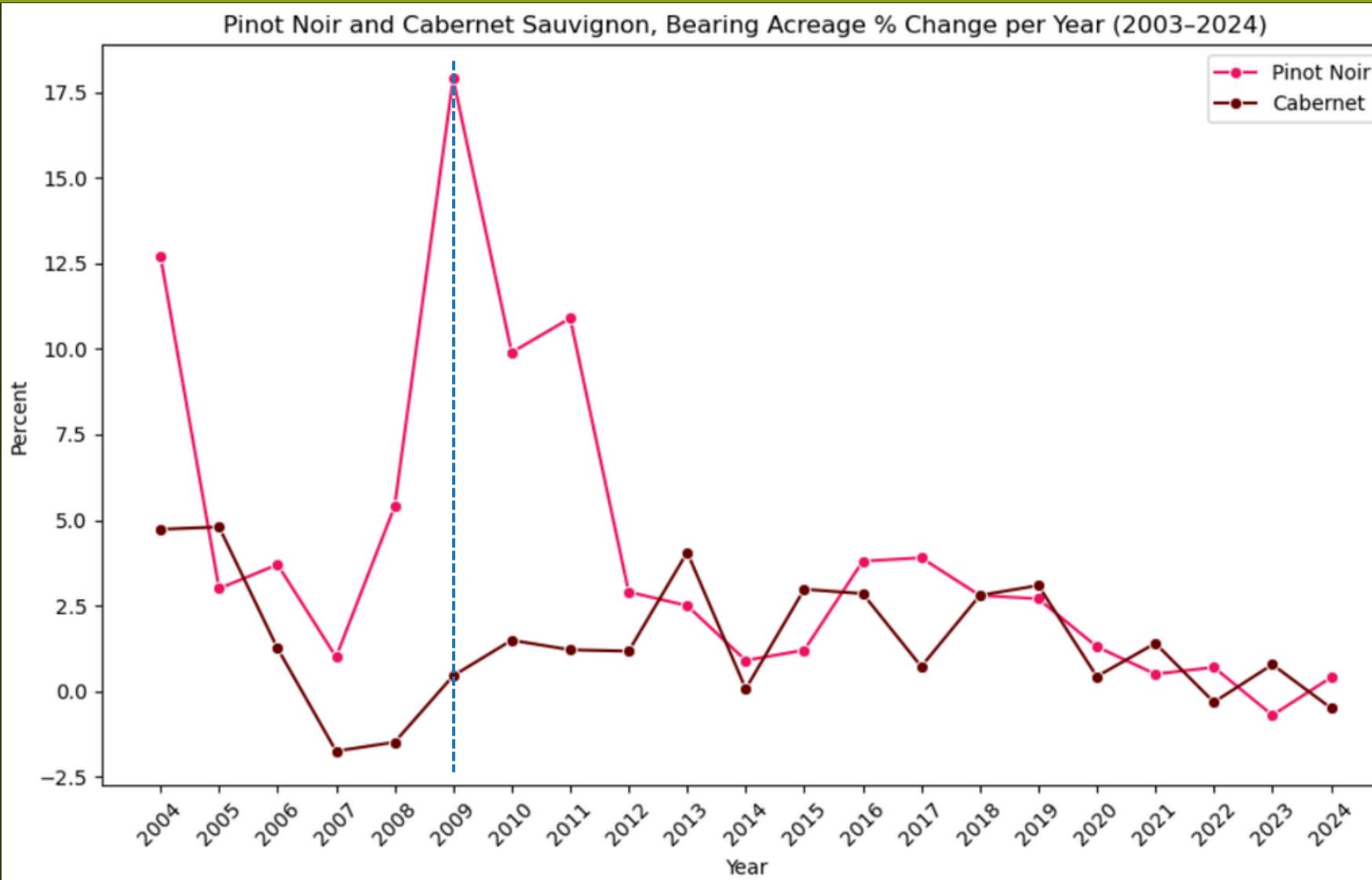
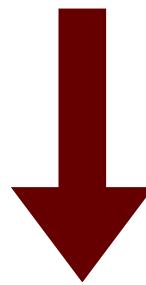
± 1.19%

standard deviation across years

Acreage %
-0.55%



Chardonnay



Acres
1124

average **decrease** per year

± 1.86%

standard deviation across years

Acreage %
1.44%

Acres
1229

average **decrease** per year

± 4.76%

standard deviation across years

Acreage %
4.16%



**So, what can we learn from the increase of
Pinot Noir bearing acreage in 2009?**

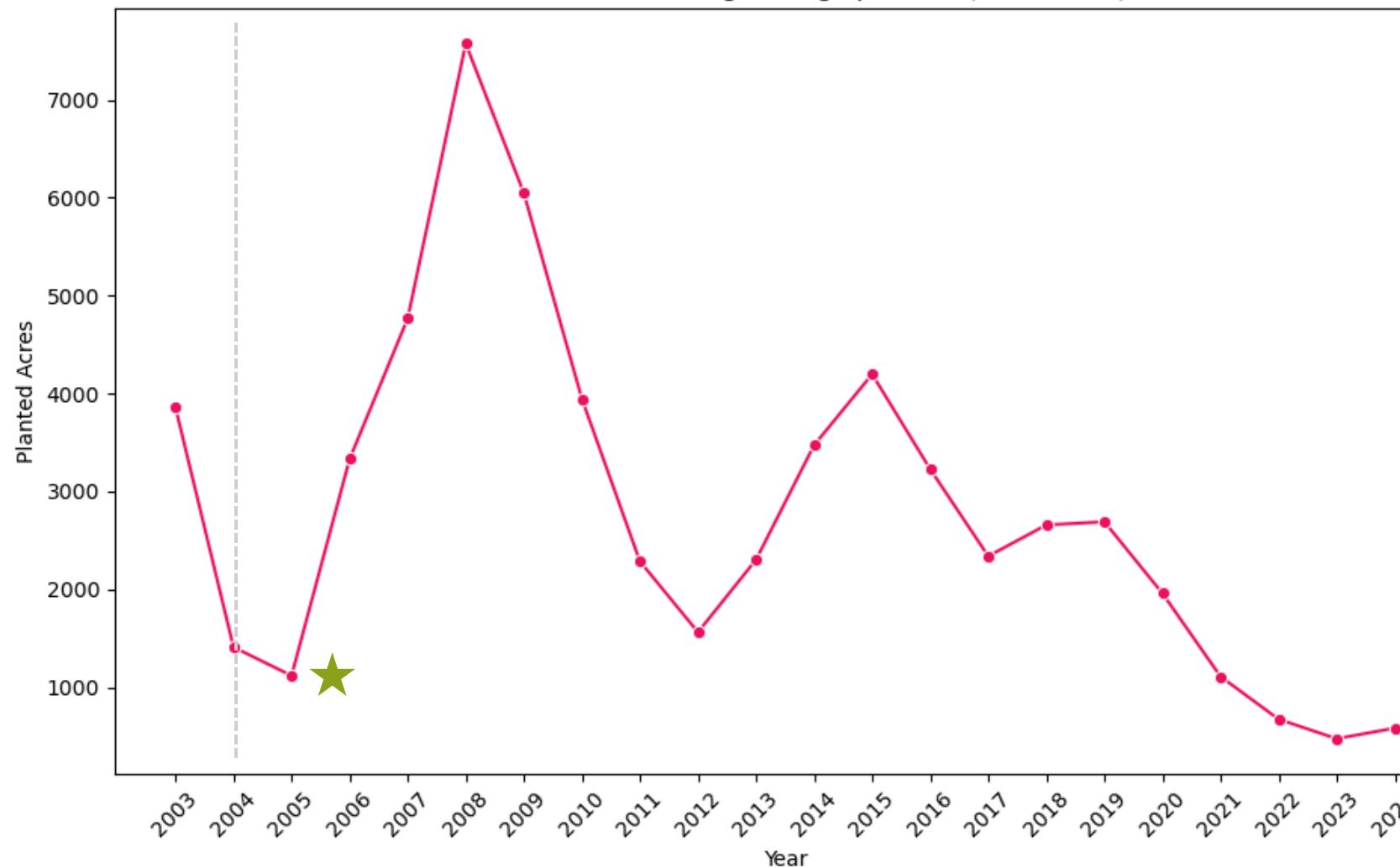
Insights



★ = highly relevant

Pinot Noir, Non-Bearing Acreage Changes

Pinot Noir, Non-Bearing Acreage per Year (2003-2024)



★ 2006 Increase

198%

acreage percent **increase** from 2005

Highly Unusual Acreage Trend in 2006

2005

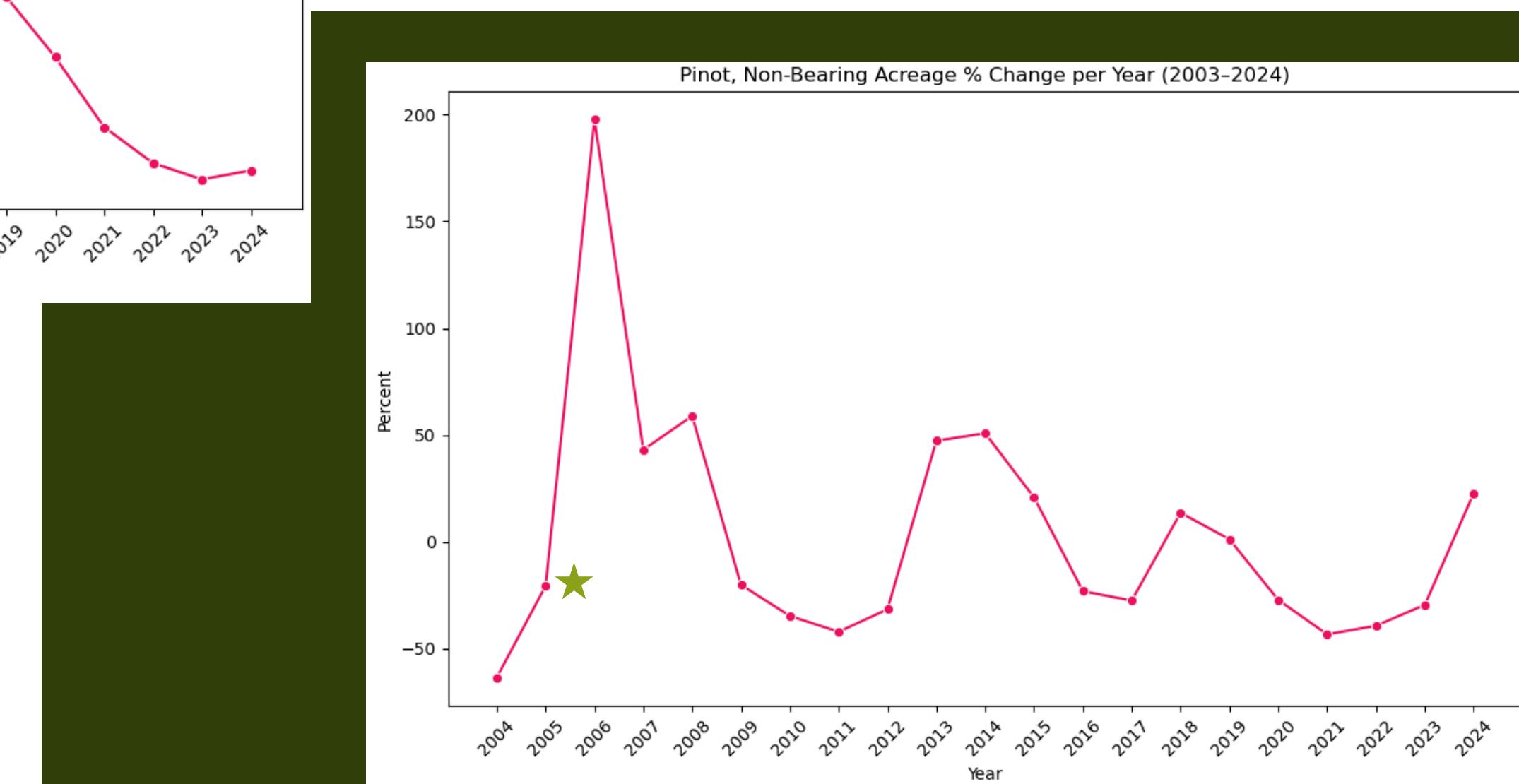
1119

absolute **increase** in acres

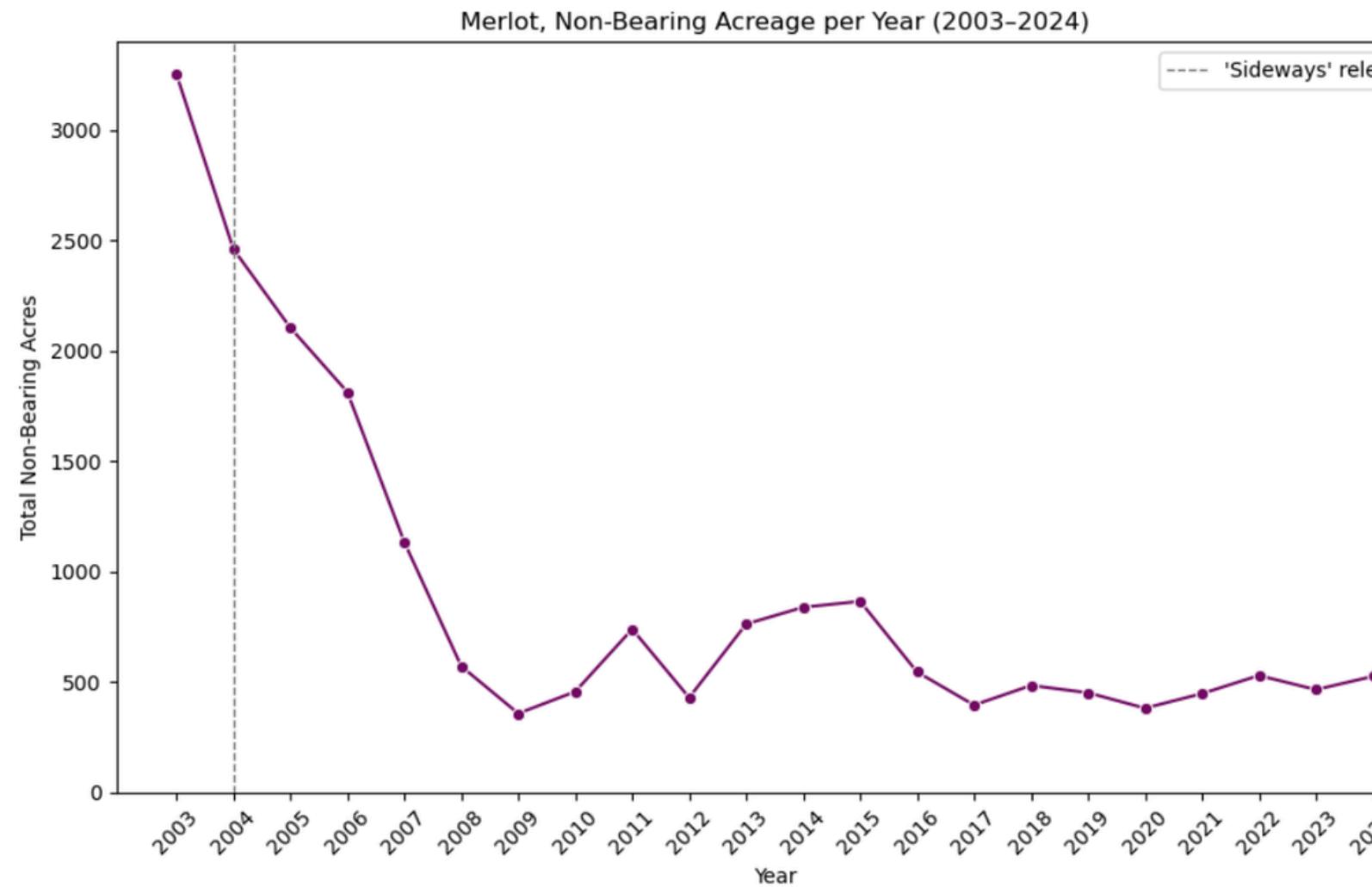
2006

3331

Pinot, Non-Bearing Acreage % Change per Year (2003-2024)



Pinot Noir, Non-Bearing Acreage Changes (as Percentage)



★ 2006-2008 Decrease

-13.8% | **-37.5%** | **-49.6%**

2006

acreage percent **decrease** from 2006

Unusual Acreage Trend in 2006-2008

2006

1813

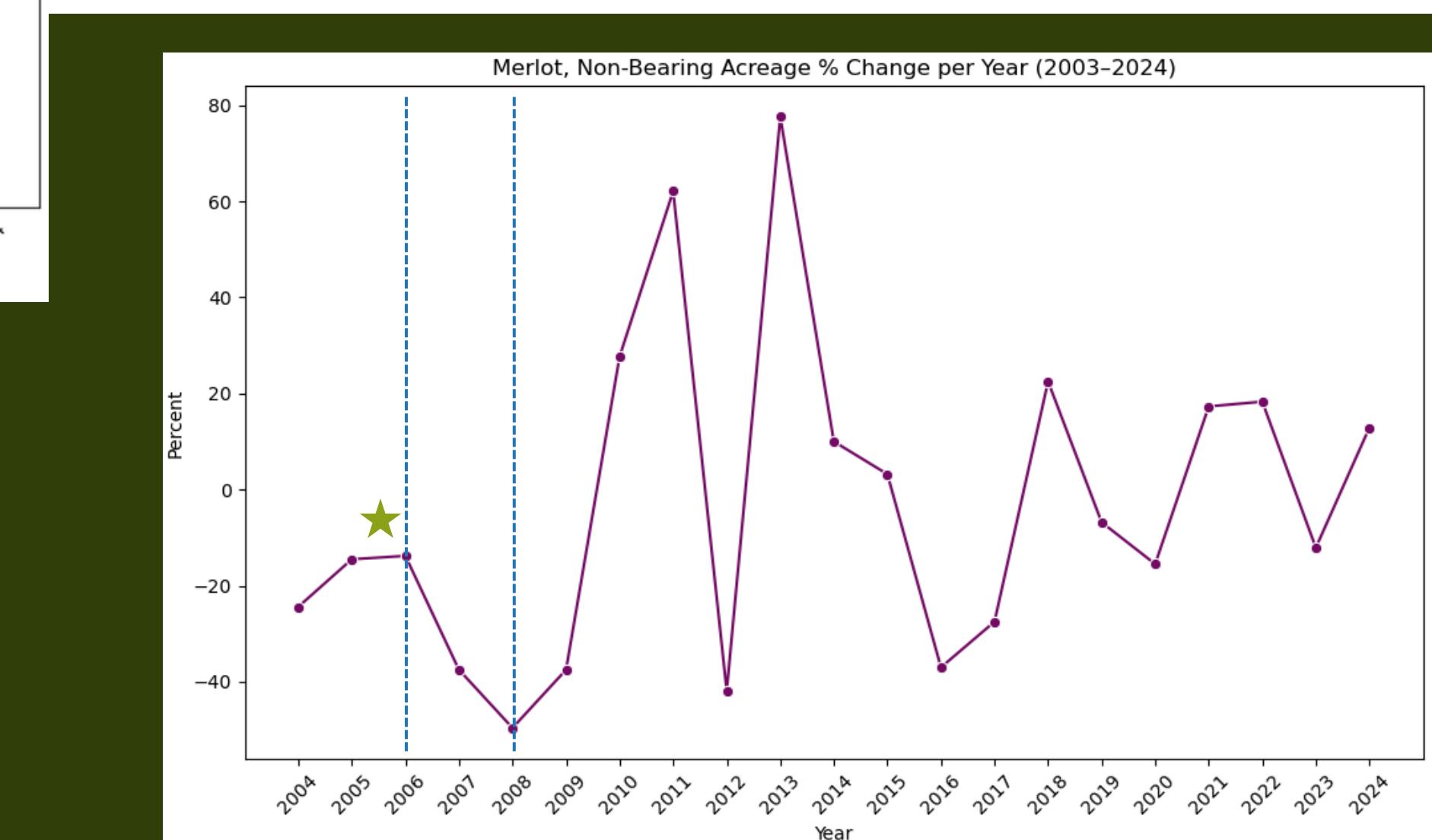
2007

1133

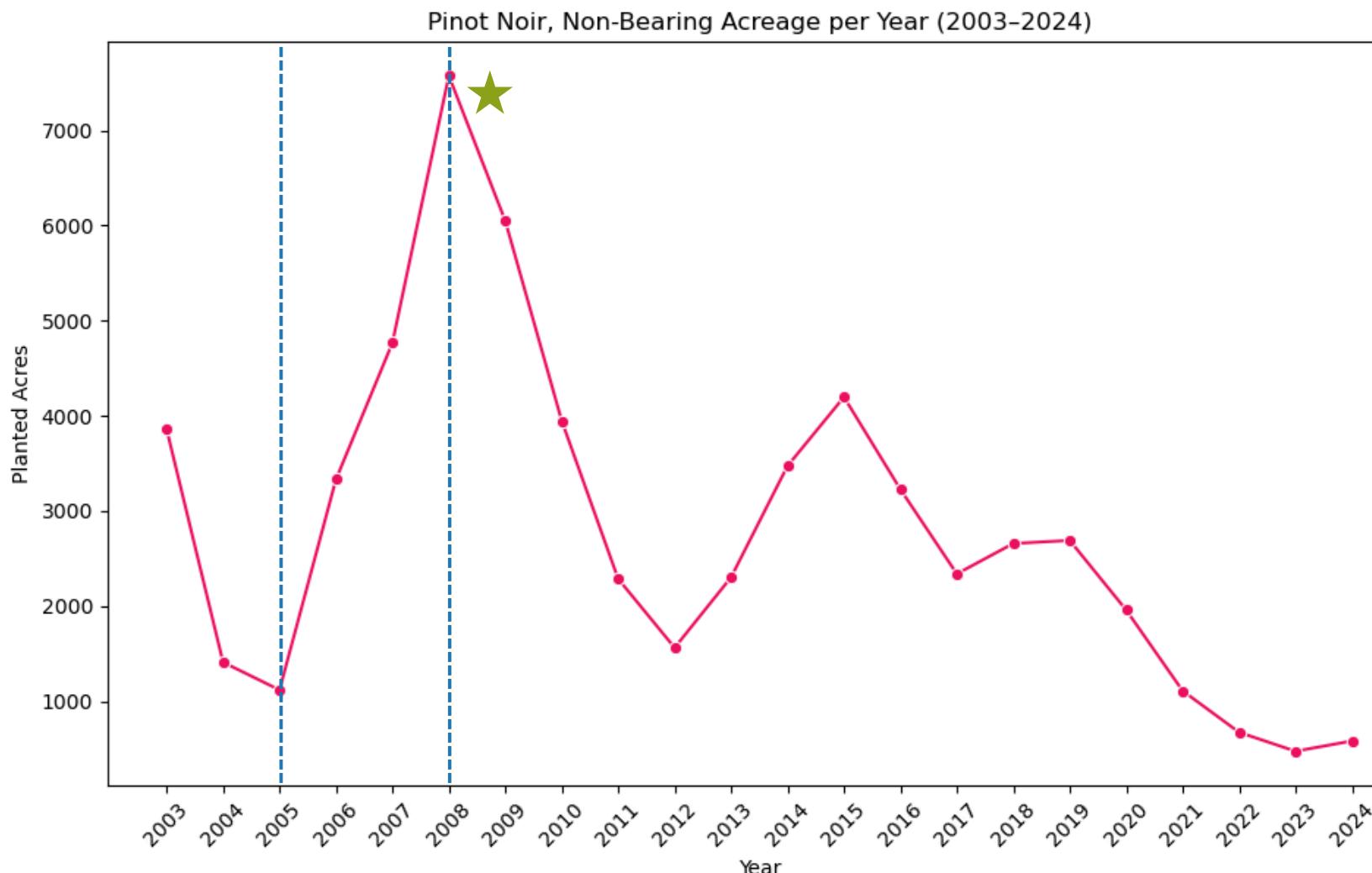
2008

571

absolute **decrease** in acreage



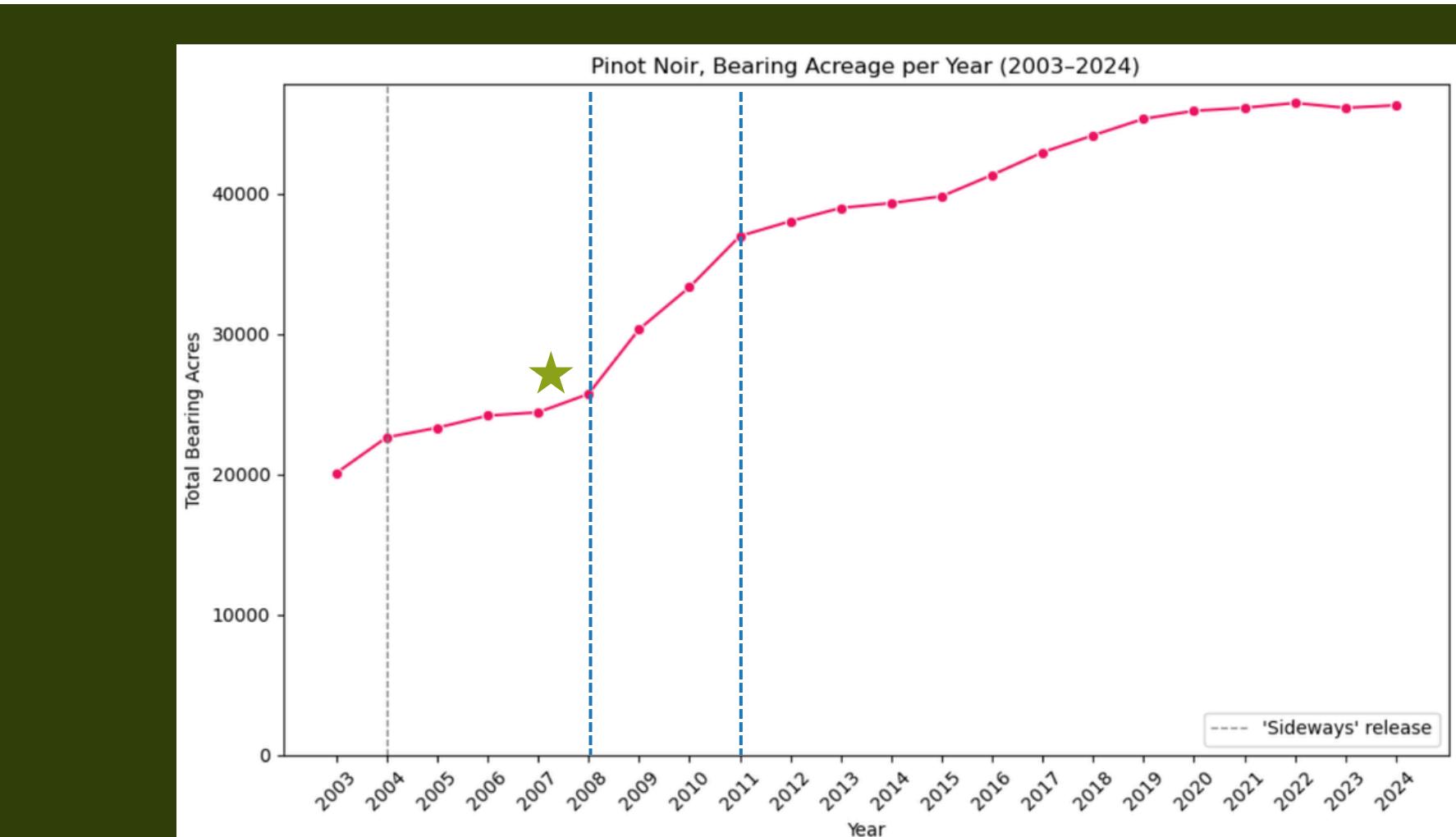
Pinot Noir Non-Bearing Acreage Increases 2005-2008



Starting at 2005, plantings increase dramatically

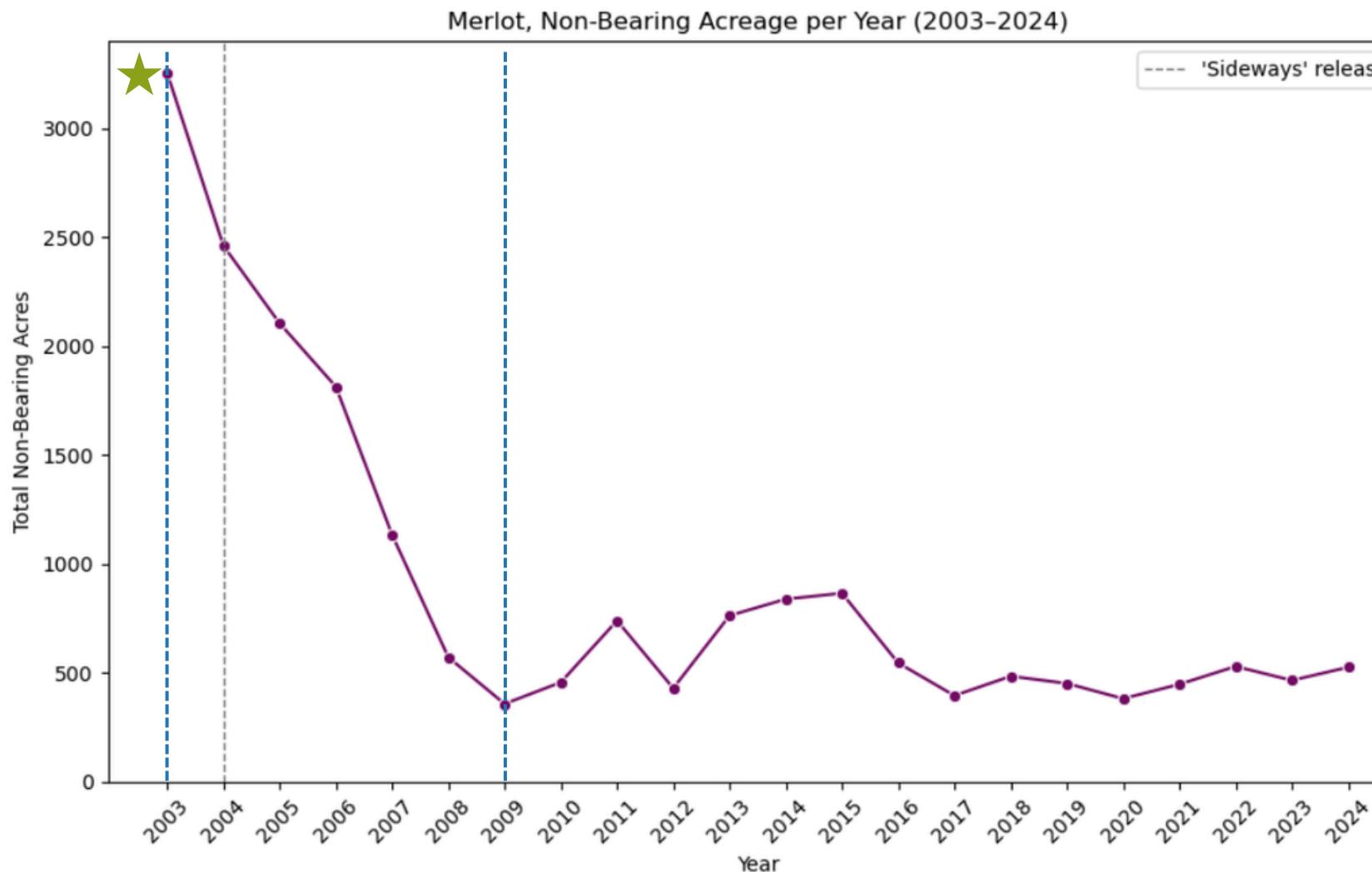
By 2008, previously planted vines are beginning to bear fruit

Remember, vines need **3-4 years** to start fruiting!

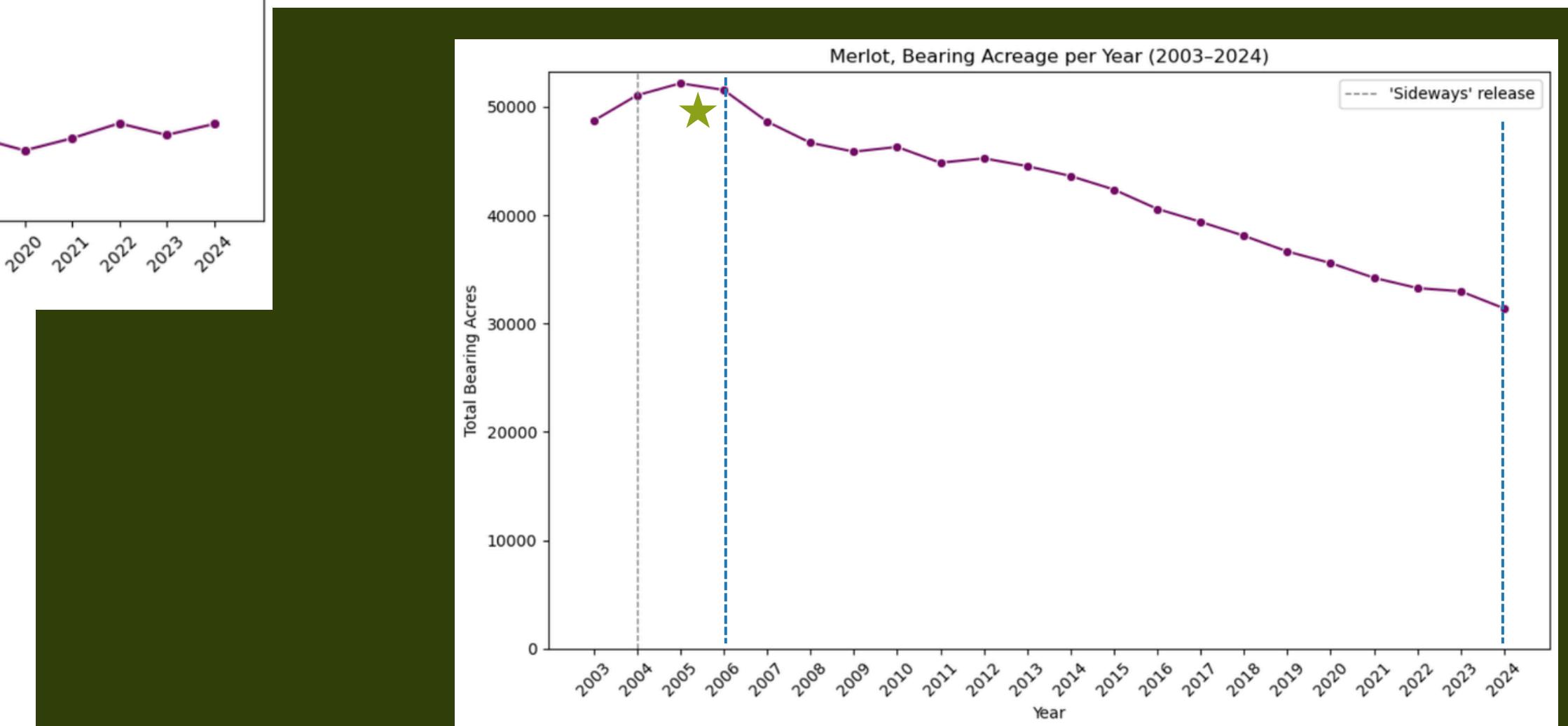


Pinot Noir Bearing Acreage Increases 2008-2011

Merlot Non-Bearing Acreage Decreases 2003-2008



2003-2009, plantings decrease dramatically



In 2006, Bearing Acreage starts to notices the severe drop in plantings from previous years and doesn't recover at any point after

Merlot Bearing Acreage Decreases 2006-2009

Are there any statistical correlations or relationships in this data?

Cabernet Sauvignon Bearing Acreage Increases...

r-value
no relationship

Pearson

0.05

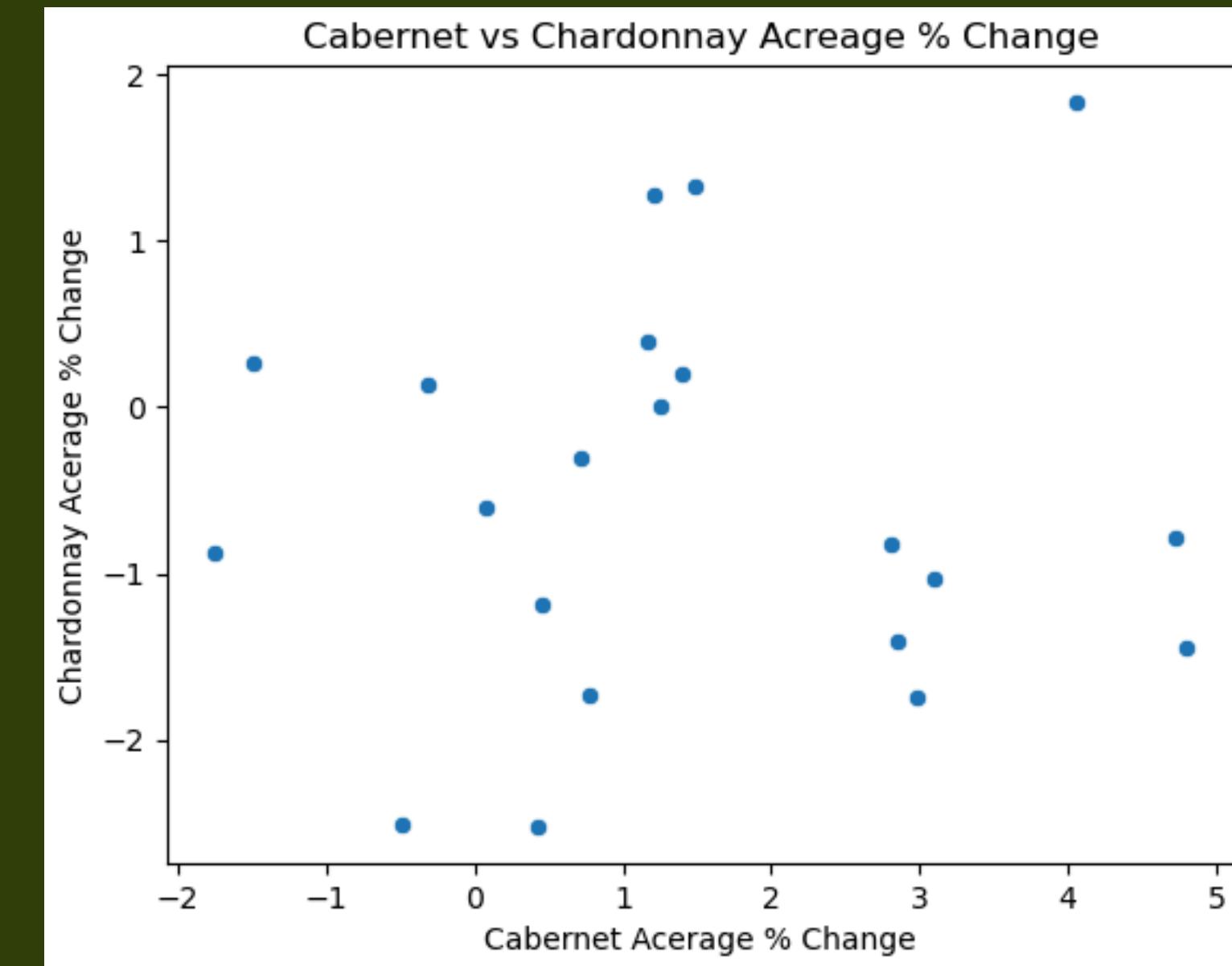
very low
correlation

Spearman

0.04

very low
correlation

There is no indication that where Cabernet **increases**, Chardonnay will **decrease** at the same time.



... and Chardonnay Bearing Acreage Decreases

Pinot Noir Bearing Acreage Increases...

r-value

*no obvious relationship**

Pearson

0.4

moderate
correlation

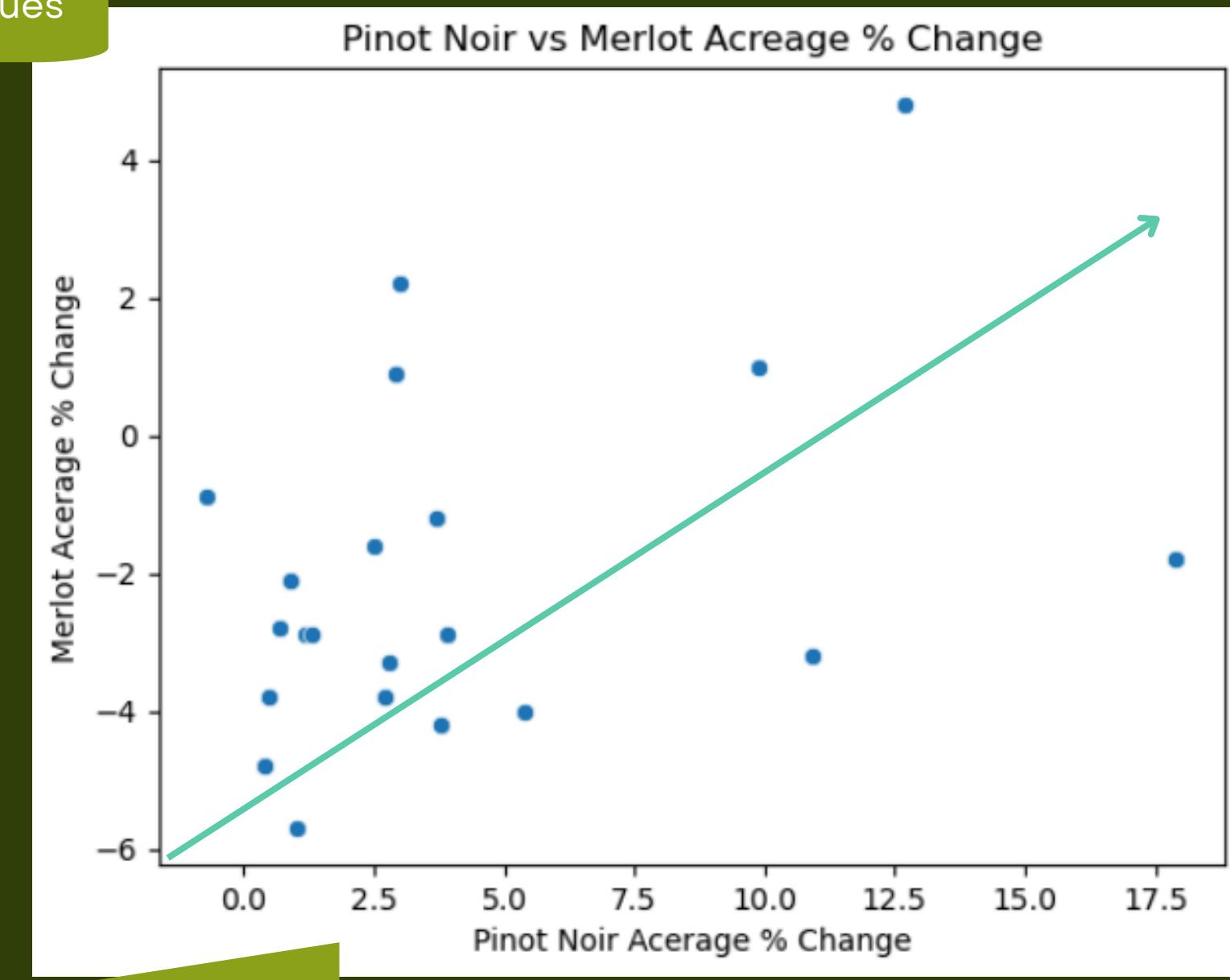
Spearman

0.27

low
correlation

★ There is some indication that where Pinot Noir **increases**, Merlot will also **decrease** at the same time.

Factors for extreme outliers by ranking values



*Clustering around -Merlot, +Pinot does suggest an inverse relationship

... and Merlot Bearing Acreage Decreases

Conclusion



Did the movie *Sideways* actually cause Pinot Noir to increase and Merlot to decease?

Did the movie *Sideways* actually cause Pinot Noir to increase and Merlot to decrease?

Probably - but Merlot may have already been going down

Conclusion

- 01 Overall, Pinot is trending up and Merlot is trending down
- 02 Google Searches possibly indicate interest in Pinot, not Merlot
- 03 Non-bearing for Pinot increases 198% in 2006 with Merlot also decreasing, but not at the same intensity
- 04 Bearing for Merlot was already declining in 2003, a year before the movie came out
- 05 Correlation Coefficient (r-value) suggests no obvious trend, but scatterplot might



Going Forward

01

Investigate Merlot and Pinot in years previous to 2004, and make projections going forward

02

Incorporate USDA Crush Reports to gain fiscal layer of depth

03

Determine if Merlot and Pinot had differences in regional dispersion, not just statewide

04

Use of more discrete consumer sentiment data on wine

05

Make a dashboard to articulate county-level data and **all** varieties



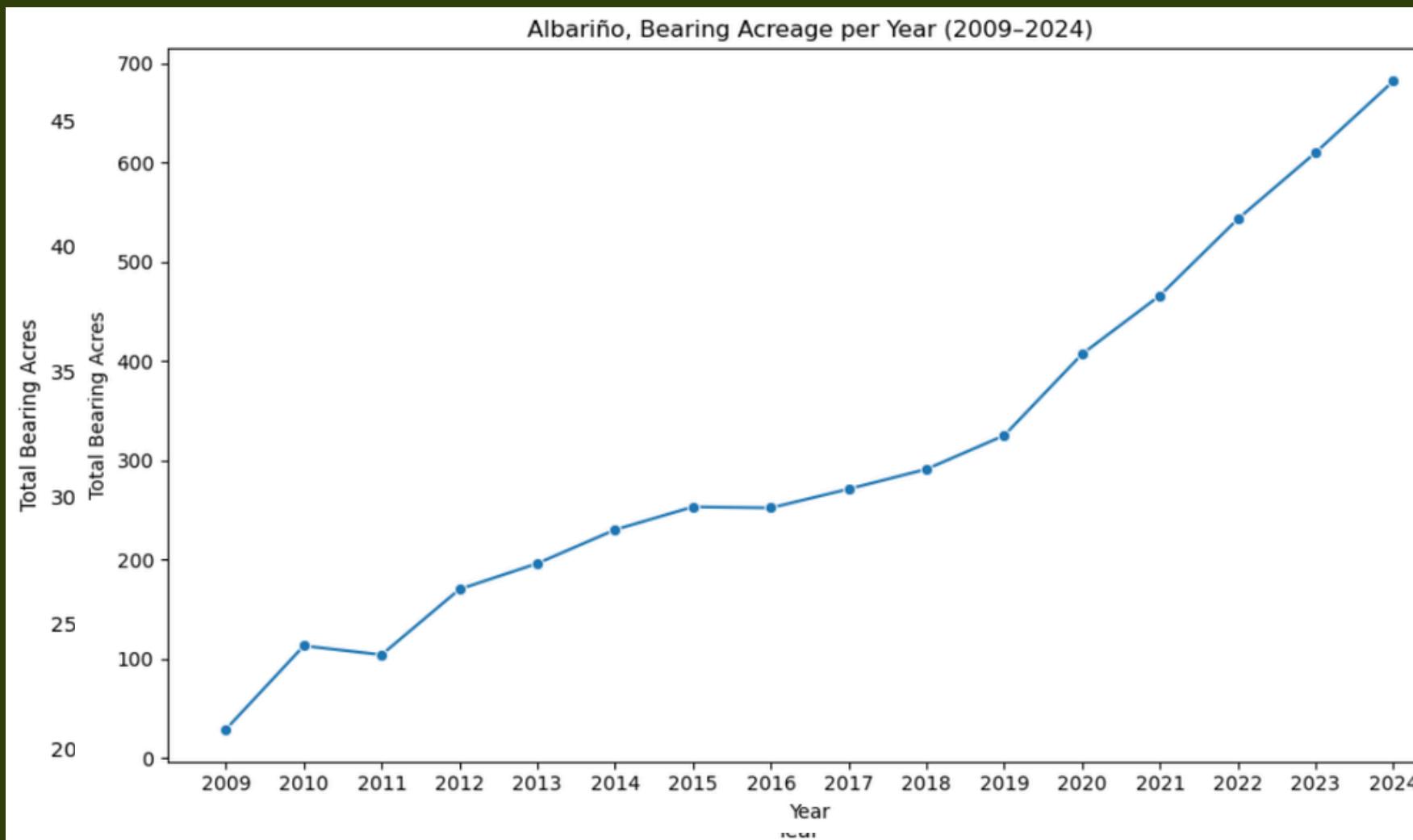
BONUS:

If you were a vineyard investor, what land/
variety would I recommend you invest in?

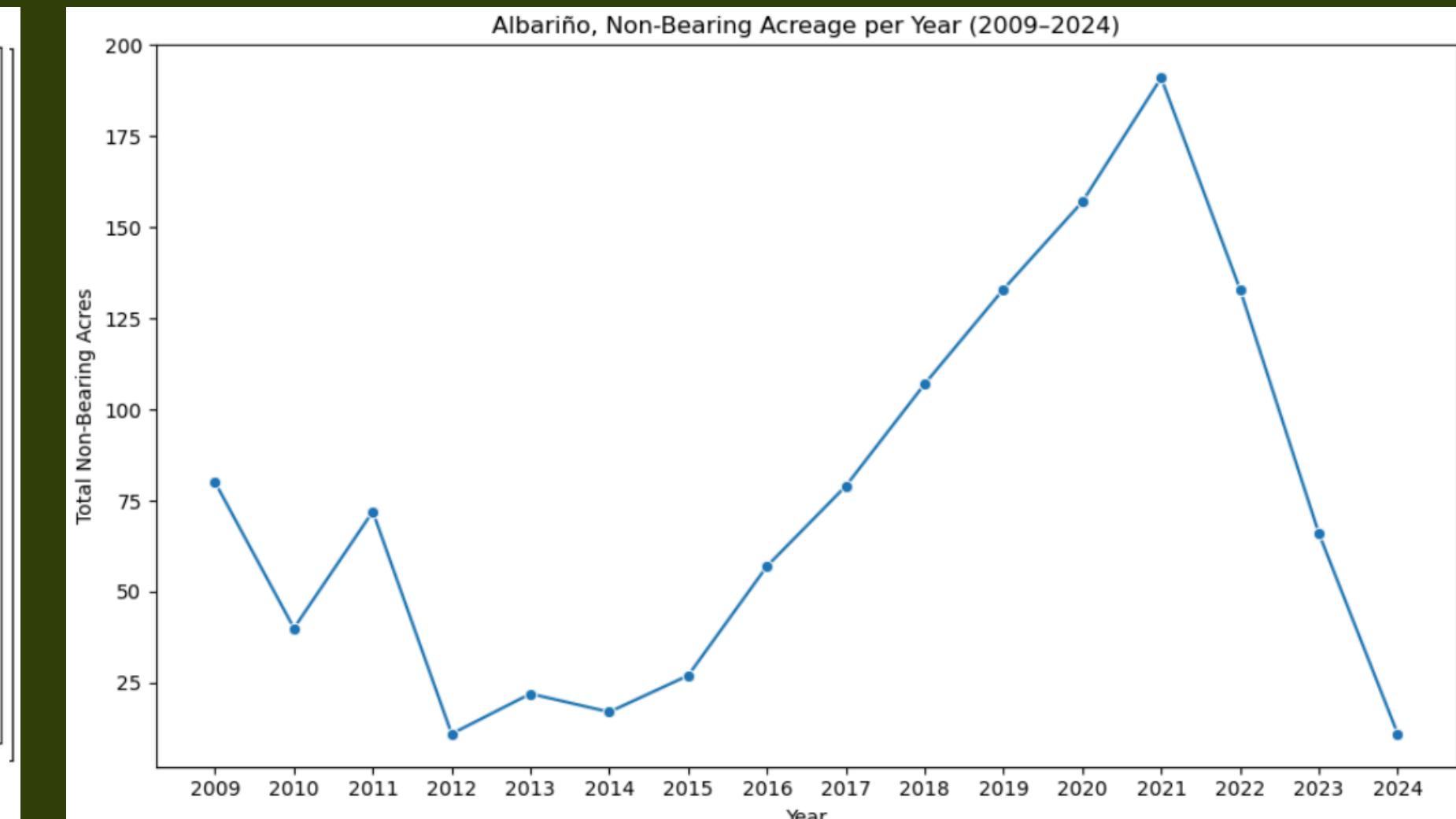
Albariño

- 01 Rising star in California - new grape (first shows up in 2009)
- 02 Explosive **Increase** in Market Acreage and a notable **Decrease** in Planted Acreage
- 02 Suggests post-2020 fall-off, not lack of consumer interest

Bearing Acreage (Market)

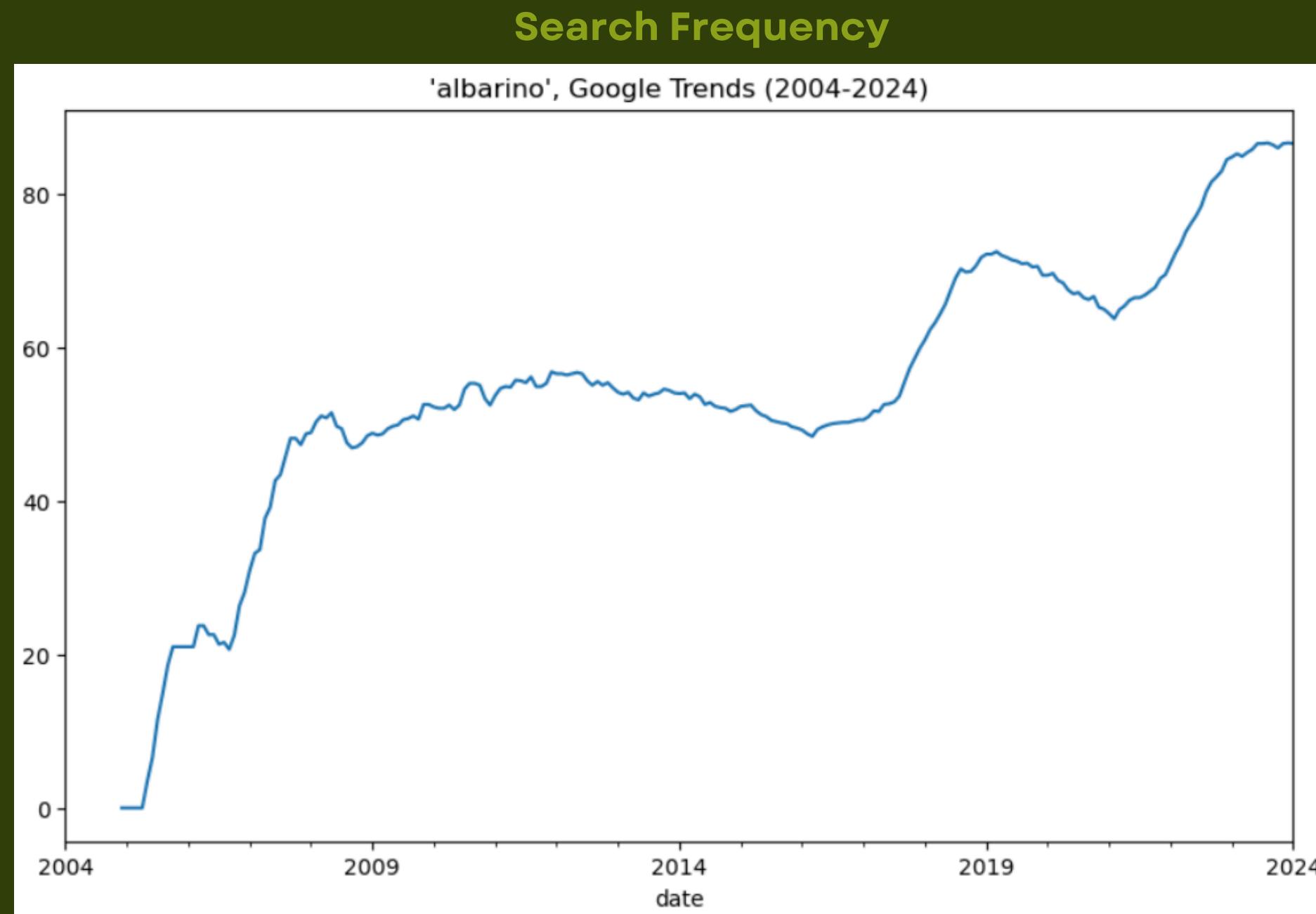


Non-Bearing Acreage (Planted)



Albariño

- 01 Maintains **Increase** in Online Interest despite losses in Planted Acreage
- 02 Potentially suggests the gap in the market can be filled can be filled with new plantings
- 03 Pricing data on crushed Albariño + similar market grapes would offer more granular insights





Questions?



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Data Sources:

*USDA Agricultural Data - Grape Acreage Reports
Google Trends API*