



# Colorado Wine on the Cusp



## Trends, Future Directions, and Avoiding Catastrophe



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# Definitions



## ■ Cusp

- *Etymology:* L., *cuspus* → point
- **Meaning,** Random House Dictionary (1 of 6 meanings)
  - *Geom.* A point where two branches of a curve meet, end, and are tangent





# Definitions

- Colorado wine currently has several sets of trends that are approaching cusp transitions
  - Supply/demand for Colorado grapes
  - Quality for new wineries and owner changes
  - Colorado branding and supply/demand



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# Colorado Wine Industry Sustainability & Viability



- S.W.O.T. Analysis
  - essential for planning industry growth rate
    - decline, maintenance, slow growth, rapid growth
  - need to account for both sustainability and viability
  - Need to account for both near-term and long-term trends



# Colorado Wine Industry Strengths



## ■ Grape Growing

- some areas have average climate suitable for *Vitis vinifera*
- dry climate w/irrigation → less disease and can control vigor
- pioneer experience has decades of accumulation to quality basis
- many vineyards part of diversified production
- Can grow wide variety of grapes in diverse sites



# Colorado Wine Industry Weaknesses



## ■ Grape Growing

- suitable *vinifera* acreage small: competes w/tree fruit & houses
- average climate non-existent: fluctuating cold events limit suitability for *Vitis vinifera* and even for more cold-tolerant grapes
- mismatch of cold site w/intolerant variety, via *vinifera* bias, yields high horticultural and economic damage
- inappropriate new investment and unplanned generational transfer wastes resources



# Colorado Wine Industry Strengths



- Winemaking and Marketing
  - growth potential in urban market with small Colorado presence
  - pioneer experience has accumulated increased quality
  - *vinifera* varieties have appealed to buyer demographics
  - Colorado branding has substantial presence
  - tourism a strong economic driver





# Colorado Wine Industry Weaknesses



- Winemaking and Marketing
  - variable grape supply/demand
    - cold events
    - swings in amount and timing of varieties planted
    - insufficient coordination among vineyards and wineries
  - wineries have common *vinifera* varietal wines in similar styles
    - compete with lower price similar wines in urban markets
    - saturate local rural and tourist style niches
  - Colorado brand unable to supply larger urban market volume
  - inappropriate new investment and unplanned generational transfer wastes resources



# Colorado Wine Industry Opportunities/Cures



- Grape Growing
  - Plant varieties with cold tolerance matched to site
    - Grand Valley and better slopes of West Elks
      - sort sites for *vinifera* or cold hardy → more total acreage & yields
    - Cold hardy in colder sites: western slope, 4-corners, plains
  - Plant varieties that give price and yield economics
    - Cold hardy/*vinifera* mix allows more total acreage/yield
  - Coordinate with winery inventory and sales trends





# Colorado Wine Industry Opportunities/Cures



- Winemaking and Marketing
  - Make wines that increase market niche variations
    - Different blends and acid/sweet styles
    - *Vinifera*/cold hardy blends and cold hardy blends and cold hardy varieties
  - Increase market base
  - Market medium price wines in amounts to supply restaurants
    - something different, high-quality, and consistent
  - Train younger demographic to unique Colorado wine niches
    - Novel presentation, flavor, or packaging
    - Colorado branded *vinifera*, cold hardy, and blends
    - Dry, sparkling, rosé/"white" reds, off-dry, fruit, fortified



# Colorado Wine Industry Threats



## ■ Grape Growing

- Pioneer fatigue and loss of knowledge and capacity during generational transfer
- Lack of or misallocation of new investments
  - continued efforts to grow *vinifera* in cold sites
  - planting without marketing plan to wineries
    - wrong varietals for winery demand
    - cold hardy cultivars without marketing plan





# Colorado Wine Industry Threats



- Winemaking and Marketing
  - Inability to maintain price
    - degradation of Colorado brand status
    - loss of wine quality
- Inability to grow market capacity
  - loss of older wine-savvy demographic
  - inability to recruit younger and/or urban demographic
- Less winery investment capital
  - Lack of investment to increase winery capacity
  - Loss of winery economics during generational transfer



# Colorado Wine Industry Supply/Demand Dynamics



- Causes of supply fluctuations
  - Cold events in vineyards cause vintage and variety shortages
    - Exacerbated by mismatch of sites and varieties
  - Vineyards giving up on plantings
    - Site/variety mismatch or non-viable economics
  - Timing and/or composition of new plantings do not match winery demand

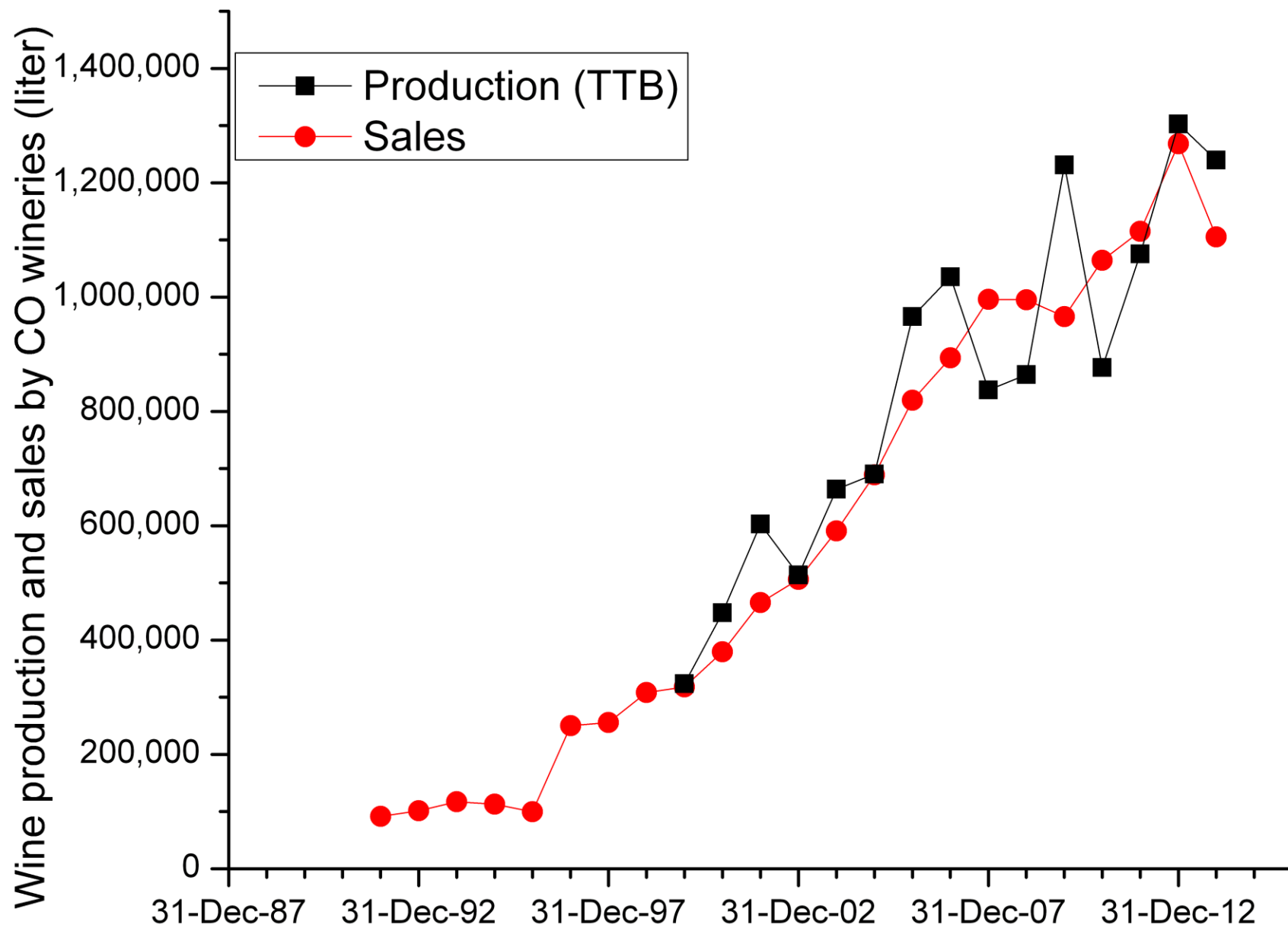


# Colorado Wine Industry Supply/Demand Dynamics

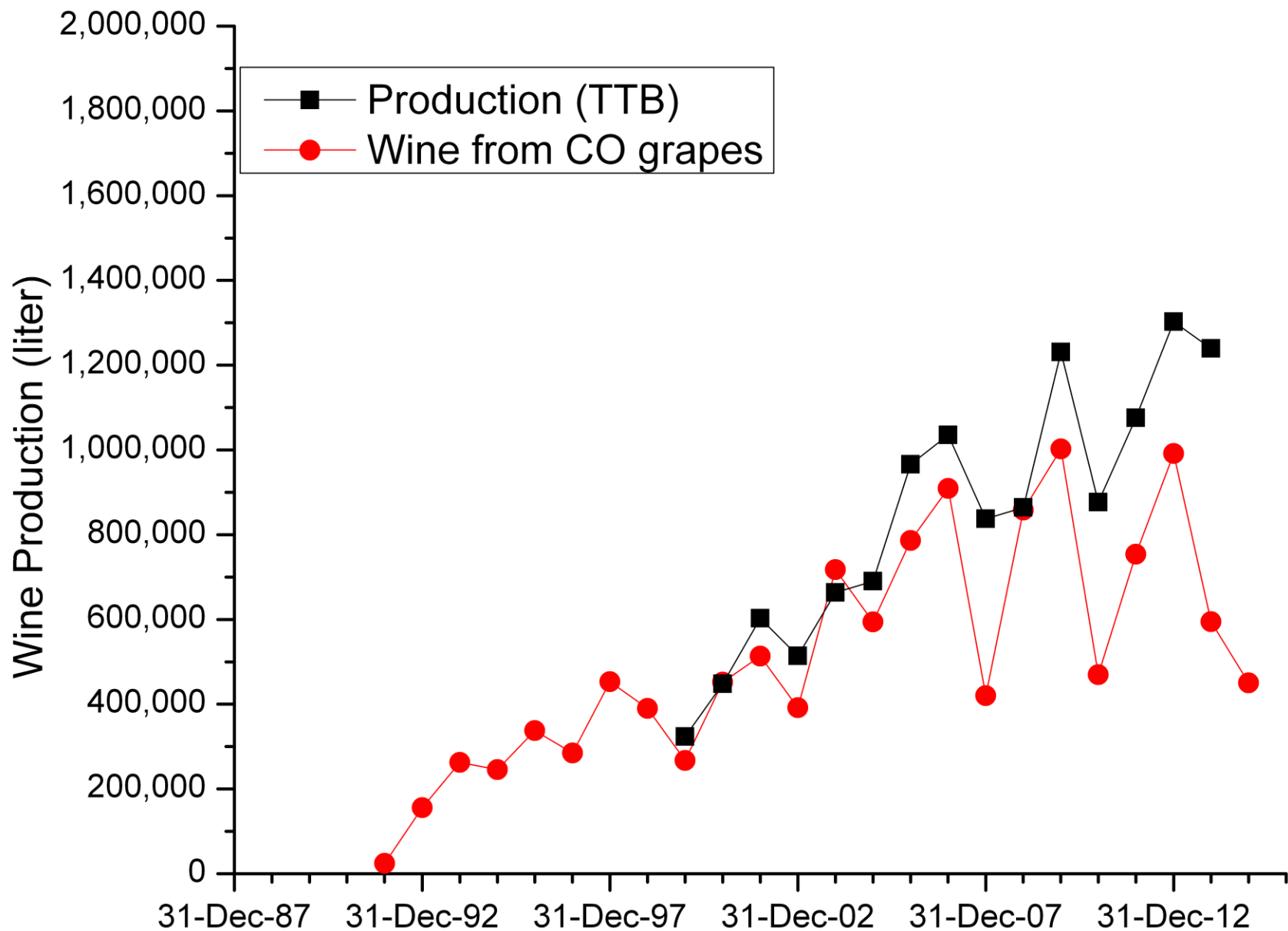


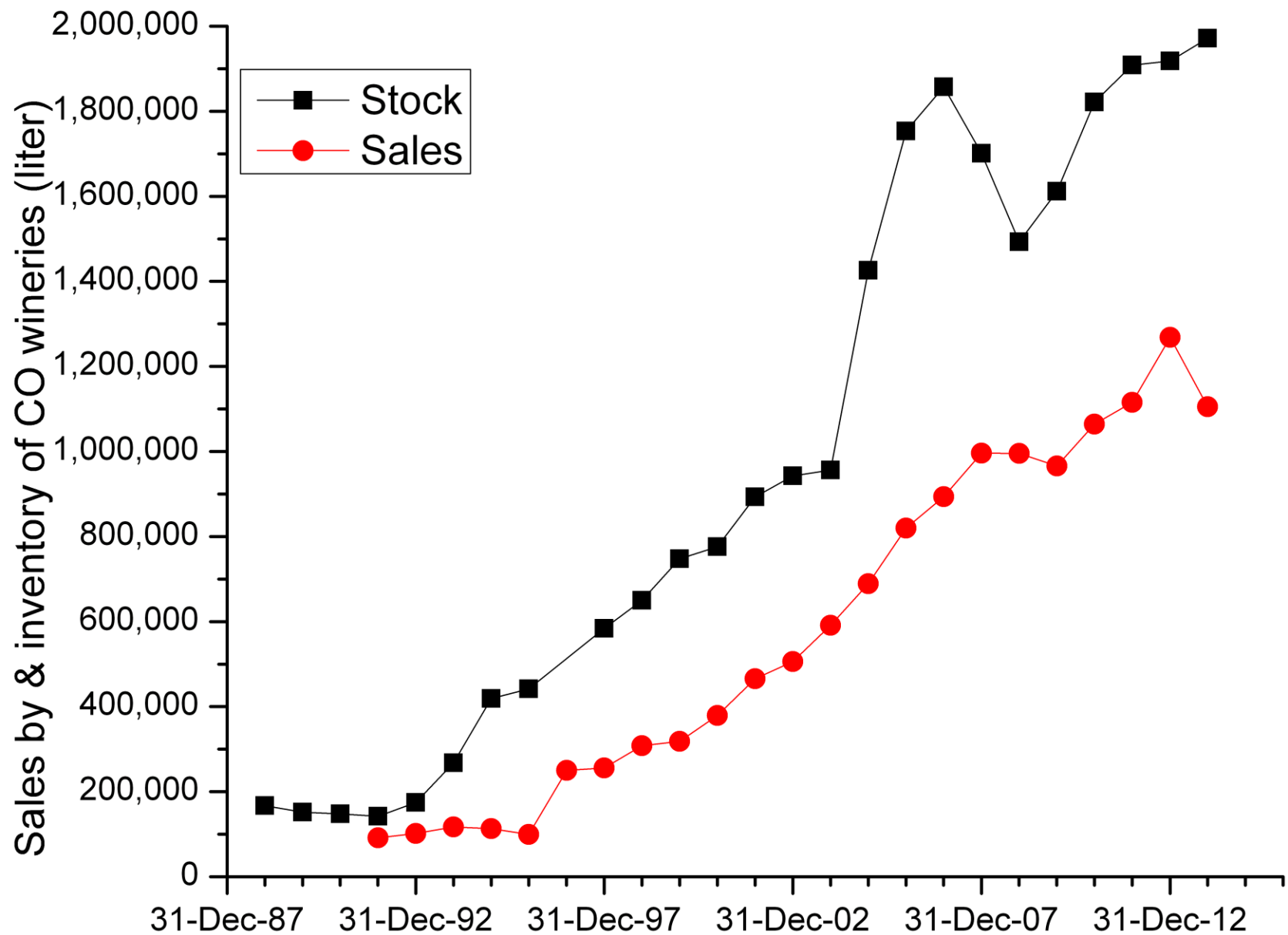
- Causes of demand fluctuations
  - Swings in adjustments to inventory stock/sales ratio, even though Colorado sales show steady year-to-year rate of increase
  - Individual wineries show much greater fluctuations

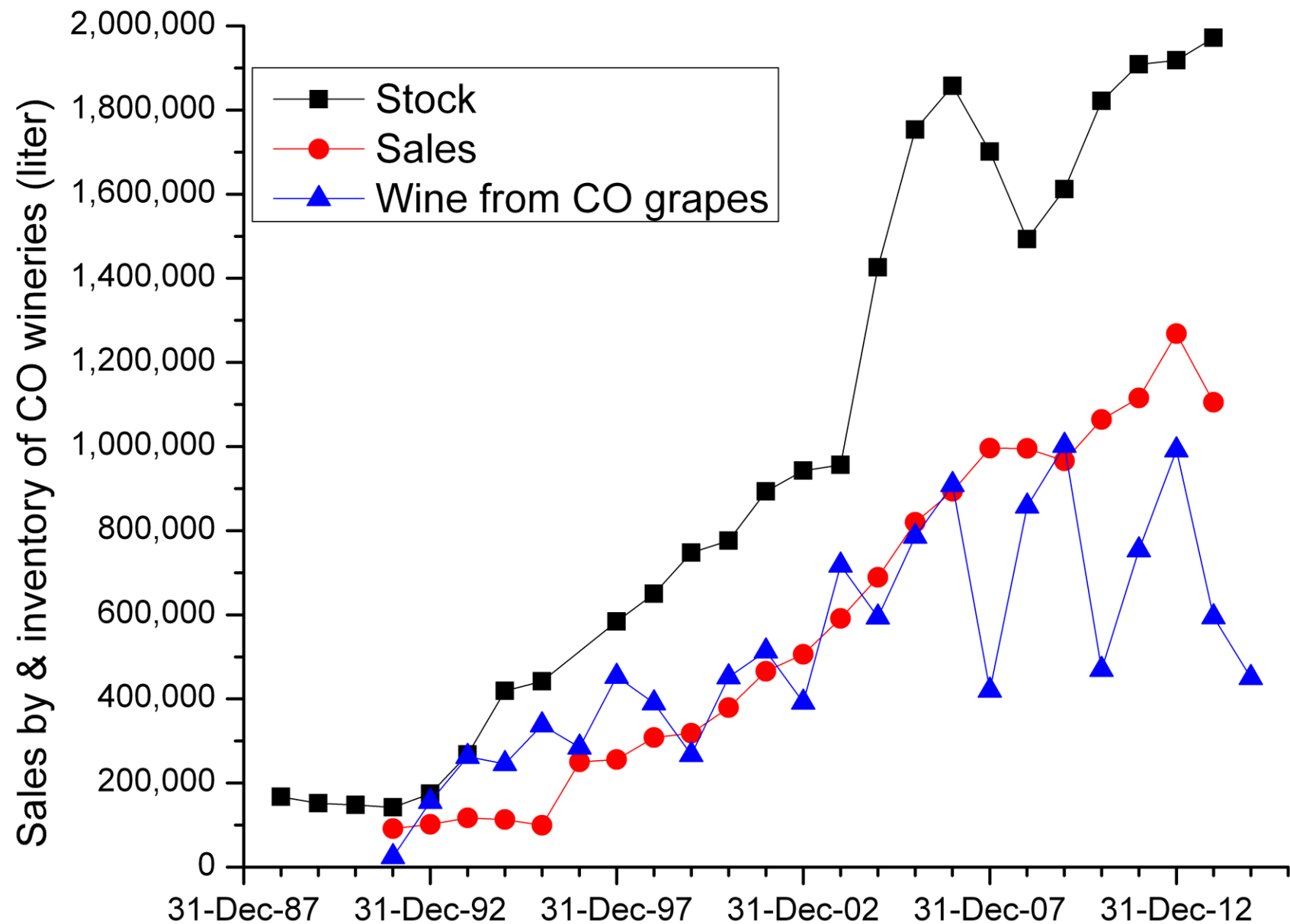












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# Definitions



- Catastrophe Theory
  - In mathematics, catastrophe theory is a branch of bifurcation theory in the study of dynamical systems





# Definitions



## ■ Catastrophe

- *Etymology: Gk. Katastrophe* → overturning
- A sudden, violent disturbance
  - Sudden is measured on various time scales
  - Violence is measured on various intensity levels

## ■ Cusp Catastrophe

- For a cusp catastrophe, two possible solutions (stable curves) in a dynamic system reach a stress point (indefinite state, where curves are cusped) where only one unpredictable definite solution then occurs





# Avoidance of Cusp Catastrophe



- Two-pronged
  - Relief of conflict dynamics before cusp is reached
- Institute new dynamics into system that turn conflict into harmony



# Examples of Cusp Catastrophe



- Response behavior of a stressed dog as stress levels gradually rise
  - trend toward increasingly cowed
  - trend toward increasingly angry





# Examples of Cusp Catastrophe



- At extreme stress, (trend unpredictable), resulting in
  - dog may instantaneously become cowed
  - dog may instantaneously become angry
  - Cowed or angry state can persist, even without more stress





# Examples of Cusp Catastrophe



- Response behavior of a real estate market
  - Trend toward price rise as demand rise
  - Trend toward buyer exit as price rise
- Normally, demand/price conflict gradually reaches stable and mildly fluctuating state







# Examples of Cusp Catastrophe



- At extreme demand stress (unqualified easy credit for buyers), unpredictability occurs, resulting in
  - prices do not stem trend toward unqualified buyer demand
  - unqualified buyers cannot sustain payments and selling trend catapults toward foreclosures





# Examples of Cusp Catastrophe



- Photosynthesis evolves in bacteria and oxygen is released
  - Oxygen is poisonous to anaerobic bacteria and they are harmed
  - Oxygen is absorbed and stored in air and water, allowing anaerobic conditions to be maintained





# Examples of Cusp Catastrophe



- Extreme stress occurs when system cannot sequester oxygen
  - Virtuous cycle occurs → runaway oxygen production to new system equilibrium point and most anaerobic forms become site specific
  - Anaerobic forms evolve way to kill off aerobic forms and maintain system





# Can Colorado Wine Industry Suffer Cusp Catastrophes?



- Several fundamental trends are currently under stress in the Colorado industry
- We need to examine trends to try and predict possible scenarios for cusp catastrophes



# Fundamental Trends in Colorado Wine Industry



- More wineries opening and wine production and sales increasing constantly
- Vineyard acres cannot meet demand for grapes of Colorado origin and supply is also inconsistent
- Excess demand filled by non-Colorado grapes



# Fundamental Trends in Colorado Wine Industry



- Lack of planning for generational change and for newcomers in new wineries results in inconsistencies in wine quality
- Previous building of wine quality associated with Colorado wine is expected by consumers
- Using new cold-hardy cultivars → steep learning curve in growing and winemaking







# Fundamental Trends in Colorado Wine Industry



- Colorado origin brand demands higher price among customers for each wine style or type, but margin is limited: consumer has many price choices for similar wines
- Wine of Colorado origin is continually smaller share of inventory produced



# Trends May Lead to Demand Cusp Catastrophe



- Increasing demand for Colorado originated grapes and wine, but price margin not flexible
- Limited ability to produce Colorado originated grapes and wines
- Demand Cusp Catastrophe may manifest as quick consumer behavior change → either devaluation of Colorado brand or shrinkage to survival of only small premium Colorado wineries



# Possible Solutions to Demand Cusp Catastrophe

- Audience Input?



# Trends May Lead to Quality Cusp Catastrophe



- Lack of planning for generational change and for newcomers in new wineries results in inconsistencies in wine quality
- Previous building of wine quality associated with Colorado wine is expected by consumers
- Quality Cusp Catastrophe may result in quick consumer behavior change to devaluation of Colorado brand or shrinkage to survival of only reputation wineries



# Possible Solutions to Quality Cusp Catastrophe



- Audience Input?





# Avoiding Cusp Catastrophes in Colorado Wine Industry



- Possible solutions to industry stress factors
  - **Have a comprehensive industry plan and implement it**
    - CWIDB, with input and guidance of stakeholders, researches and creates a comprehensive and detailed, long range, research and marketing plan
      - Create a task force to research causes, effects, and come up with a plan and recommendations
      - Establish metrics for plan and review as needed
  - Continue as is and let industry survive as best it can
  - Encourage sizable outside investment in targeted industry infrastructure and marketing







# Avoiding Cusp Catastrophes in Colorado Wine Industry



- Possible Elements of Comprehensive Plan
  - Grow more Colorado grapes
    - Increase will come in cold hardy cultivars
  - Incentivize profitable vineyard and winery enterprises
    - Tax credits according to initial qualifications and job creation





# Avoiding Cusp Catastrophes in Colorado Wine Industry



- Possible Elements of Comprehensive Plan
  - incentivize quality and reputation of CO wines
    - Create metrics to reward increases in market share and/or value of reputation in marketplace





# Avoiding Cusp Catastrophes in Colorado Wine Industry



- Possible Elements of Comprehensive Plan
  - Learn to make quality wines and blends from cold hardy cultivars
    - Comprehensive education, inter-winery cooperation, applied research, and consultant efforts can shorten learning curve
  - Incentivize education in winemaking and marketing, especially for new wineries



# Implementation of Comprehensive Plan Elements



## ■ MARKETING

- CWIDB undertook review of previous marketing efforts and decided on more comprehensive efforts, now being implemented with a multi-year and unified plan



# Implementation of Comprehensive Plan Elements



## ■ RESEARCH

- CWIDB and CSU are reviewing previous research efforts
- Reviews are not yet comprehensive and analyzed
- Need more industry and expert input
- No comprehensive long-range plan yet devised



# Implementation of Comprehensive Plan Elements



## ■ EDUCATION

- CSU and CWIDB need comprehensive review of past education and outreach efforts to address knowledge gaps and devise long range plan
- Reviews are not yet comprehensive and analyzed
- Need more CAVE and general industry and expert input
- No comprehensive long range plan yet devised





# Where Do We Go?



- Take problems and opportunities seriously and work on them NOW
- Devise long range comprehensive plan, and then define short, medium, and long range aims and goals
- Document everything and keep institutional memory alive and use to inform current deliberations
  - CWIDB and industry history presently being researched and report will document trends

