



WINERY ECONOMICS

By

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OUTLINE

- World, US and PNW Wine Industry
- Economics of investing in and operating smaller premium wineries in the Pacific Northwest
- Pricing, product mix, and investment alternatives



WORLD SUPPLY AND DEMAND SITUATION

- World wine production in 2010
 - 263,900,000 hl
- World wine consumption in 2010
 - 238,000,000 hl
- Supply > Demand?



TOP WINE PRODUCING COUNTRIES

Country	% of World Production
Italy	18.4%
France	17.3%
Spain	13.7%
USA	7.4%
Argentina	6.0%
China	4.9%



TOP WINE CONSUMING COUNTRIES

Country	% of World Consumption
France	12.4%
USA	11.4%
Italy	10.3%
Germany	8.5%
China	6.0%
UK	5.5%



WINE SALES IN THE U.S.- 2002 TO 2012

IN MILLIONS OF GALLONS

Year	Table Wine	Dessert Wine	Champagne/ Sparkling Wine	Total Wine	Total Retail Value (billion)
2012 (Est.)	749	65	42	856	\$34.6
2011	724	71	41	836	\$32.9
2010	681	66	37	784	\$30.0
2009	666	64	33	764	\$28.7
2008	650	65	32	746	\$30.0
2007	647	62	33	742	\$30.4
2006	627	57	32	717	\$27.8
2005	609	52	31	692	\$25.8
2004	589	45	31	665	\$24.0
2003	570	40	29	639	\$22.3
2002	552	37	28	617	\$21.8



TABLE WINE VOLUME BY COLOR IN U.S. SUPERMARKETS

COLOR	1991	1995	2008	2009
Red	17%	25%	44%	47%
White	49%	41%	42%	40%
Blush	34%	34%	14%	13%
TOTAL	100%	100%	100%	100%

Source: Based on U.S. supermarket data from ACNielsen.



CURRENT WINE SALES SITUATION

- 2012 wine sales in U.S.
 - 856 million gallons
 - \$34.6 billion value
- Since 2000 sales growth value has been 80%
- Premium table wines priced at \$7 or more per 750 ml account for:
 - Fastest growing market segment in sales, most profitable



NUMBER OF WINERIES

Bonded

U.S.

7,600+

Washington

780+

Oregon

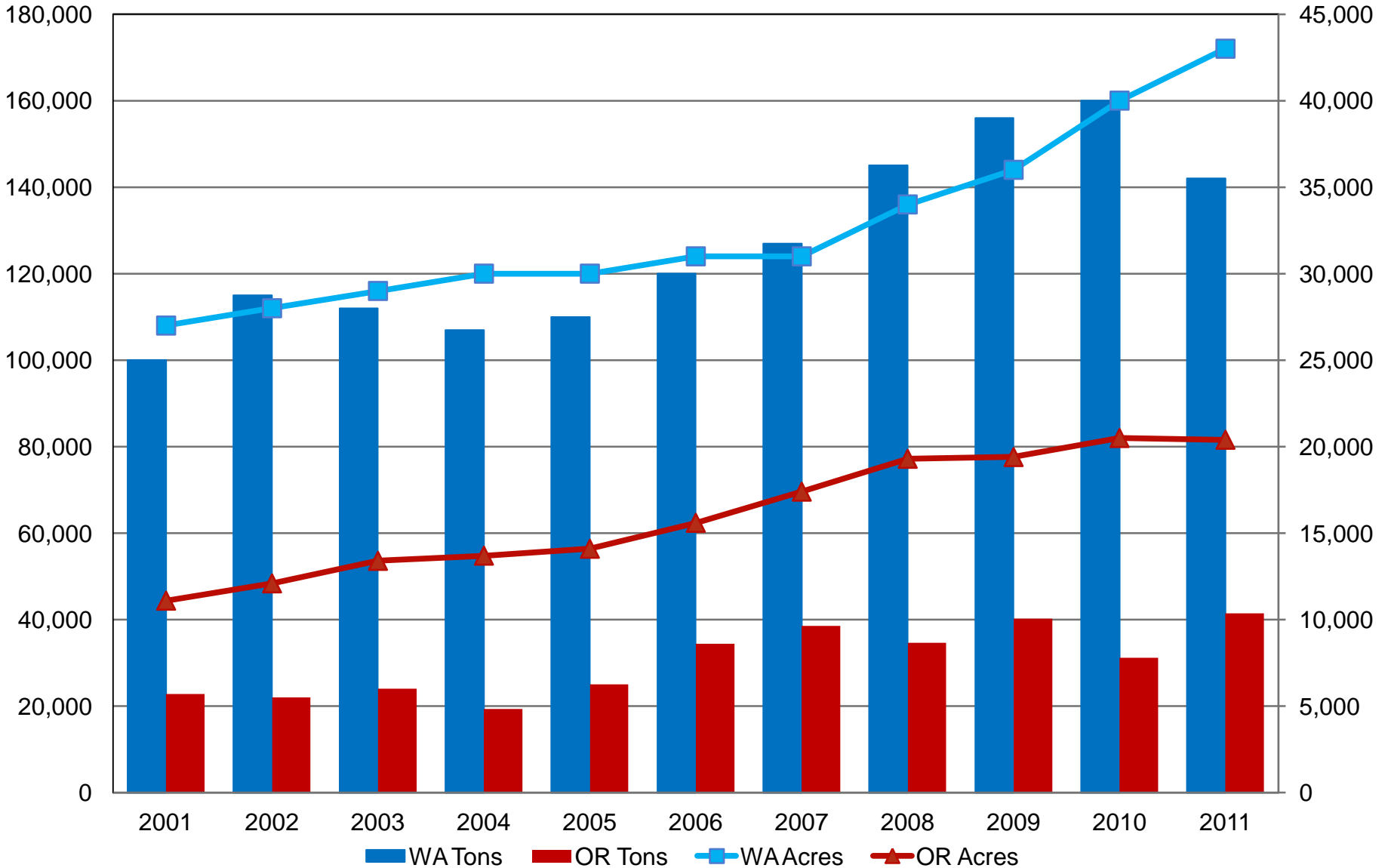
460+



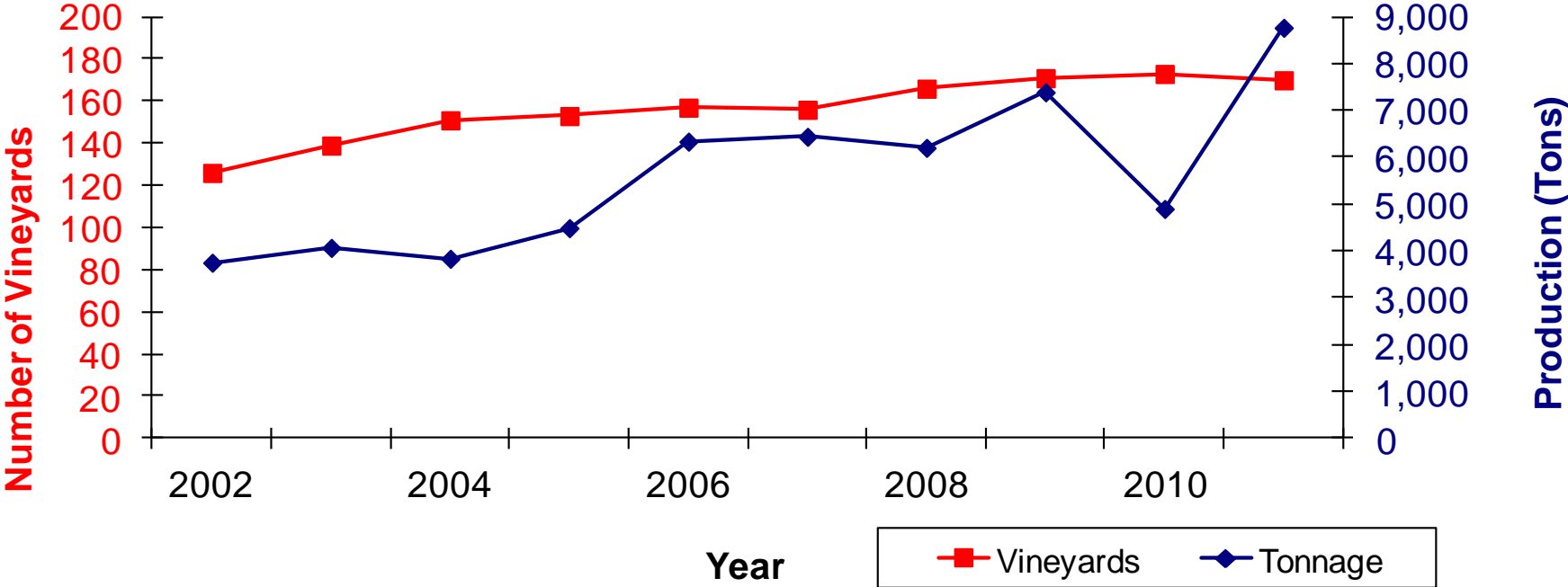
Washington and Oregon Production and Acreage 2001-2011

Tonnage

Acres




NUMBER OF VINEYARDS AND TONNAGE IN SOUTHERN OREGON, 2002-2011



WINERY ECONOMIC RESOURCES

- Winery & Vineyard Workbooks

- http://www.agmrc.org/commodities_products/fruits/wine/winery_and_vineyard_feasibility_workbooks.cfm
- <http://www.wawgg.org/>
- Industry info  Starting a Winery or Vineyard

- Online Calculator

- <http://www.nwgrapecalculators.org/>
- <http://www.nwwinerycalculators.org/>



ECONOMICS OF SMALL WASHINGTON WINERIES

- 500 to 10,000 cases of premium wines
- Economic-engineering approach
- Estimate the initial investment, operating costs, and financial returns



NO STANDARD WINERY

- Juice yield
- Quality of wine
- Temperatures and length of time of the fermentation process
- Length of aging process
- Use of oak cooperage
- Labor and capital intensity
- Bottling dates
- Marketing methods
- Access to grapes
- Etc.



INFORMATION GENERATED IN THE ANALYSIS

- Identify the personnel and capital assets required to construct & operate 6 wineries of various sizes between 500 and 10K annual case production
- Calculate the total dollar investment required to construct each winery
- Estimate annual operating costs for each winery
- Calculate annual cash flow for each winery
- Calculate net present value (NPV), internal rate of return (IRR), equity payback, and debt recovery for each size winery



INTRODUCTORY QUESTIONS

- 2,000 case winery
- Product Mix
 - 25% White
 - 75% Red
- Inflation cost of 2% annually
- No bulk wine
- 150 gallons/ton juice recovery
- Cooperage
 - 100% of reds and 50% whites
 - 30% new purchased annually



CAPITAL ASSETS- RECEIVING EQUIPMENT

<u>Receiving Equipment</u>	Units	Cost	Ship/ Install	Total
Tons of grapes required based on winery size and juice recovery				34.3
Picking Bins	20	\$300.00	\$15.00	\$6,300.00
Hopper	1	\$11,000.00	\$550.00	\$11,550.00
3-4 tons/hr Stemmer/Crusher	1	\$6,495.00	\$324.75	\$6,819.75
900 lb Membrane Press	1	\$18,500.00	\$925.00	\$19,425.00
1.5-30 gpm, 2" TC Must Pump	1	\$5,873.00	\$293.65	\$6,166.65
5,000 lb, 42in. x 42in. Platform Scale	1	\$1,200.00	\$60.00	\$1,260.00
Must Lines, 3" plastic flex (feet)	0	\$6.21	\$0.31	\$0.00
Other	0	\$0.00	\$0.00	\$0.00
Other	0	\$0.00	\$0.00	\$0.00
TOTAL				\$51,521.40



TOTAL INVESTMENT COSTS BY EQUIPMENT CATEGORY (\$)

Cost Category	2000 Case Winery
Receiving Equipment	\$51,521.40
Bottling Equipment	\$0.00
Cellar Equipment	\$14,769.11
Materials Handling	\$54,631.50
Refrigeration	\$14,700.00
Fermentation/Storage	\$48,783.00
Cooperage	\$50,137.50
Tasting Room	\$7,490.70
Plant and Office	<u>\$510,000.00</u>
Total Investment Costs	\$752,133.21



TOTAL INVESTMENT & PER UNIT COSTS (\$)

Cost Category	
<u>Per Unit</u>	<u>Cost</u>
\$/Case	\$376.07
\$/Gallon	\$158.17
\$/750 ml	\$31.34



OPERATING COSTS

- Equipment, land and operating financing
- Grape costs
 - \$1,000/ton whites and \$2,000/ton reds
- Bottling timeline and mobile bottling costs
- Packaging
- Labor
- Other variable and fixed costs



VARIABLE (OPERATING) COSTS BY WINERY SIZE

Variable Cost	10 Year Avg	\$/Case
Grapes	\$65,726	\$32.86
Packaging	\$39,112	\$19.56
Mobile Bottling	\$8,856	\$4.43
Taxes and Dues	\$14,940	\$7.47
Full Time Labor	\$38,631	\$19.32
Part Time Labor	\$12,811	\$6.41
Marketing	\$14,235	\$7.12
Utilities &Supplies	\$2,497	\$1.25
Cellar Supplies	\$3,920	\$1.96
Other	\$12,127	\$6.06
Total Avg. VC	\$212,855	\$106.43



FIXED COSTS BY WINERY SIZE (\$)

Fixed Cost	10 Year Avg	\$/Case
Insurance	\$2,234	\$1.12
Maintenance	\$3,285	\$1.64
Property Tax	\$6,833	\$3.42
Depreciation	\$40,527	\$20.26
Interest	\$28,750	\$14.38
Total Fixed Costs	\$81,628	\$40.81



TOTAL, VARIABLE, AND FIXED COSTS BY WINERY SIZE (\$)

Cost Category	10 Year Avg	\$/Case
Total Variable Costs	\$212,855	\$106.43
Total Fixed Costs	\$81,628	\$40.81
TOTAL COSTS	\$294,483	\$147.24



ASSUMPTIONS MADE IN CALCULATING CASH FLOWS

- A 2% inflation rate was used
- Any and all additional injection of capital beyond initial outlays at time 0 are 100% equity financed
- In the first year, Riesling was sold, in second year Merlot and Chardonnay, and in the third year all varieties were sold
- Wine pricing
 - \$20.00/bottle or \$240/case tasting room
 - \$15.00/bottle or \$180/case direct to retail
 - \$11.25/bottle or \$135/case wholesale



WINERY SALES

- Tasting room sales accounted for as % of premium cases sold

	Sales (%)	Price/bottle (\$)
Tasting Room	75%	\$18.00
Direct to Retail	10%	\$15.00
Wholesale	15%	\$11.25



CASH FLOW STATEMENT

Earnings Before Taxes

+ Carryover Loss

Taxable Income

Taxable Income

- Income Tax

Gross Cash Flow

Gross Cash Flow

+ Depreciation

- Principal Payments

Net Cash Flow



FINANCIAL ANALYSIS TO DETERMINE ACCEPTABILITY OF INVESTMENT

- Net Present Value (NPV)
 - 11% discount rate
- Internal Rate of Return (IRR)
- Equity payback period
- Discounted payback period



CASH FLOW PROJECTIONS

Year	Cash Flow	Discounted Cash Flow
1	(\$397,796.89)	(\$397,796.89)
2	(\$239,163.52)	(\$215,462.63)
3	\$88,351.16	\$71,707.78
4	\$91,951.24	\$67,233.95
5	\$95,446.11	\$62,873.31
6	\$143,283.11	\$85,031.55
7	\$119,378.78	\$63,824.77
8	\$107,492.07	\$51,774.46
9	\$104,112.31	\$45,177.09
10	\$105,995.99	\$41,436.46



NET PRESENT VALUE (NPV), INTERNAL RATE OF RETURN (IRR), EQUITY PAYBACK PERIOD, AND DISCOUNTED PAYBACK PERIOD

Winery (Cases)	NPV (\$)	IRR	Equity Payback (yrs)	Discounted Payback (yrs)
2,000	(\$124,200.15)	5.96%	>10	>10



PRODUCT PRICE AND INPUT PRICE CHANGES

- What has a greater impact on returns and NPV
 - Product price change
 - Grape input price change



NPV & IRR FOR A 20% PRODUCT PRICE INCREASE OR GRAPE INPUT PRICE DECREASE, 2000 CASE WINERY

Scenario	NPV	IRR
Product Price Increase (20%)	\$195,930	12.30%
Grape Price Decrease (20%)	(\$58,696)	8.58%



PRODUCT VERSUS GRAPE PRICE

○ Impact on returns

- Product price has greater effect than grape input price
- Bottom line can be dramatically influenced with control of product price



INCUBATOR SCENARIO

- Assume start-up winery will use an existing facility
- No real estate loan
 - Monthly lease payment (\$2,000/mn)
- Keep existing capital loan
 - No equipment provided



SCENARIO COMPARISONS

2,000 Case Winery		
Evaluation	Build Facility	Incubator
NPV	(\$124,200)	\$56,202
IRR	5.96%	13.67%



SUMMARY AND CONCLUSIONS

- Plant and office followed by cooperage were the largest investment costs
- Economies of size exist with the wineries
- The 10,000 case winery had highest IRR and shortest payback periods
- Cooperage has significant impact on operation costs and quality
- Product sales price control has more impact on returns than grape input price
- Incubators can have positive financial benefit



THANKS FOR YOUR TIME!



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