Managing the “Business Risk” of Commodities

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Risk: business and financial

"Business risks … result from the inability to accurately predict quantity and price outcomes. Because firms face business risks, they also face financial risks. Financial risk is the possibility that a firm may not earn enough capital to pay off its debts. Price fluctuations create varying degrees of financial risks, such as reducing profits below zero. By following forward-pricing strategies, firms can lessen the risk of financial default."

Leuthhold, Junkus, & Cordier, The Theory and Practice of the Futures Markets, P. 138

Overview of process

- The focus of this session is on the "Management" side of risk management specifically focused on creating alignment among management.
- Alignment: a position of agreement or alliance.
- Exists when a unified understanding of key business elements are reached.
  - How the business goes to market with its product
  - Financial risk
  - Risk management goals (budget vs. market)
  - Strategies
- Exists when the BOD, CEO, CFO, Treasury, Purchasing, Finance, Sales and R+D have reached consensus.

Key understandings of business alignment

- **Financial size of business:** Typically measured in gross sales.
- **Key financial metric for measuring success:** EBITDA, gross margin, budget, etc..
- **Financial risk tolerance:** Amount of money the company can afford to lose without changing the way it does business. Typically a percent of the key financial metric.
- **Product pricing window:** The amount of time it takes to implement a product price change in response to a competitive action, significant cost change, or price leadership role.
- **Even position:** When sales and commodity coverage are in balance and profit margins are secured. This should match the product pricing window. Positions “long” or “short” of even add risk.
- **12-Month forward portfolio risk:** The cumulative volatility of all key ingredients quantified by period and measured by 1 or 2 std. deviations.
- **Acceptable strategies:** Agreed to strategies consistent with the risk profile of the company.
- **Approved authority limits:** Purchasing authority and additional sr. management authority.

This is your company

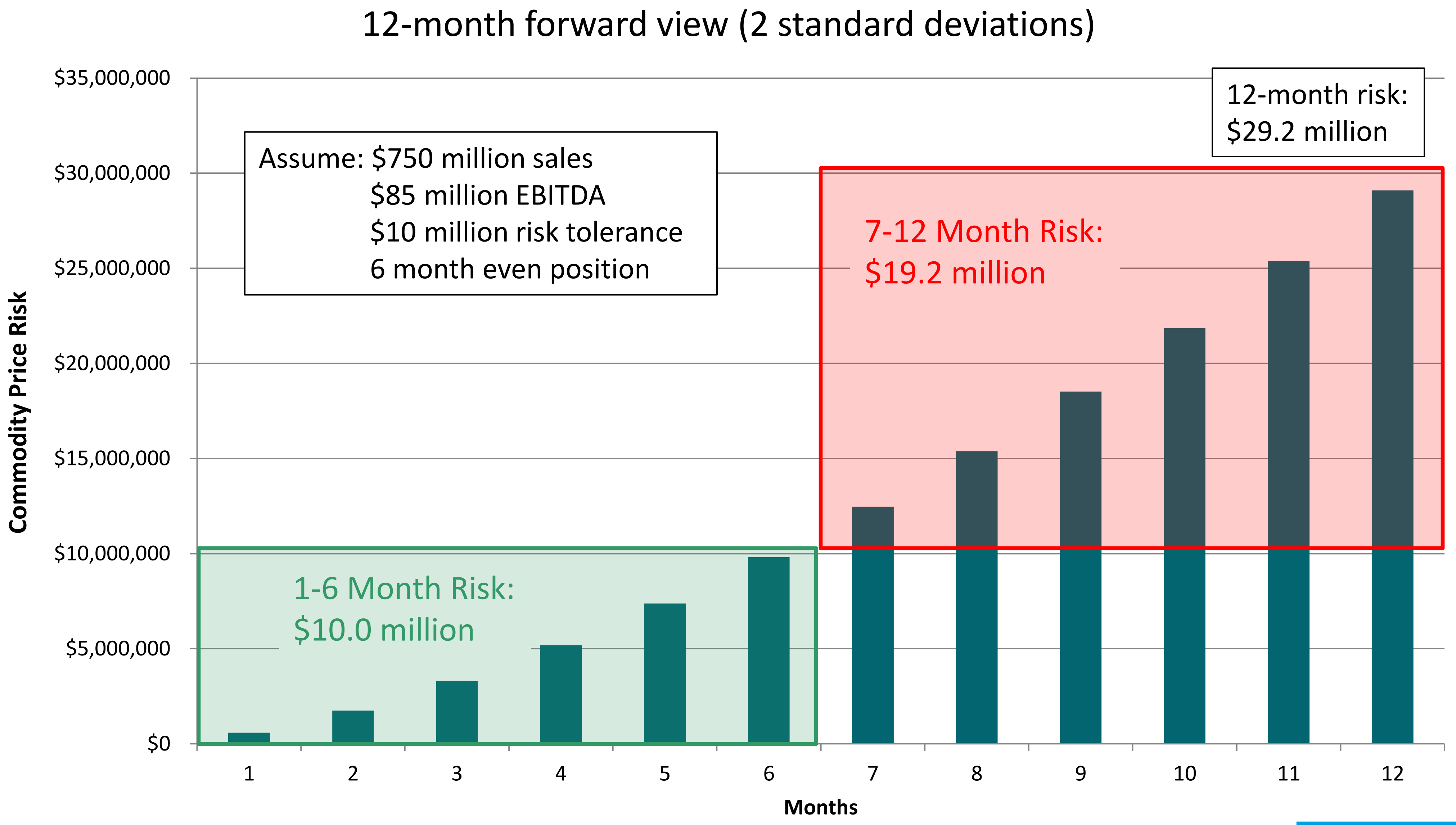
- **Financial size of business:** The business is a cereal company generating $750 million in annual sales.
- **Key financial metric for measuring success:** The company has an EBIDTA target of $85 million or 11.3% of annual gross sales.
- **Financial risk tolerance:** Through interviews and meetings the company has agreed that $10 million is the maximum amount of risk it can absorb verses EBITDA.
- **Product pricing window:** 6 months
- **Even position:** 6 months - positions “long” or “short” of even adds risk.
- **12-Month forward portfolio risk:** $29.2 million (2 standard deviations)
- **Acceptable strategies:** Fixed price cash, futures, and call options.
- **Authority limits:** <u>Purchasing:</u> +/(-) $5 million vs. $10 million total risk tolerance
  +/(-) two months long or short of 6 month even position
  <u>Senior management:</u> additional approval required for positions outside of purchasing financial authority or position limits

Portfolio of commodity risk and volatility

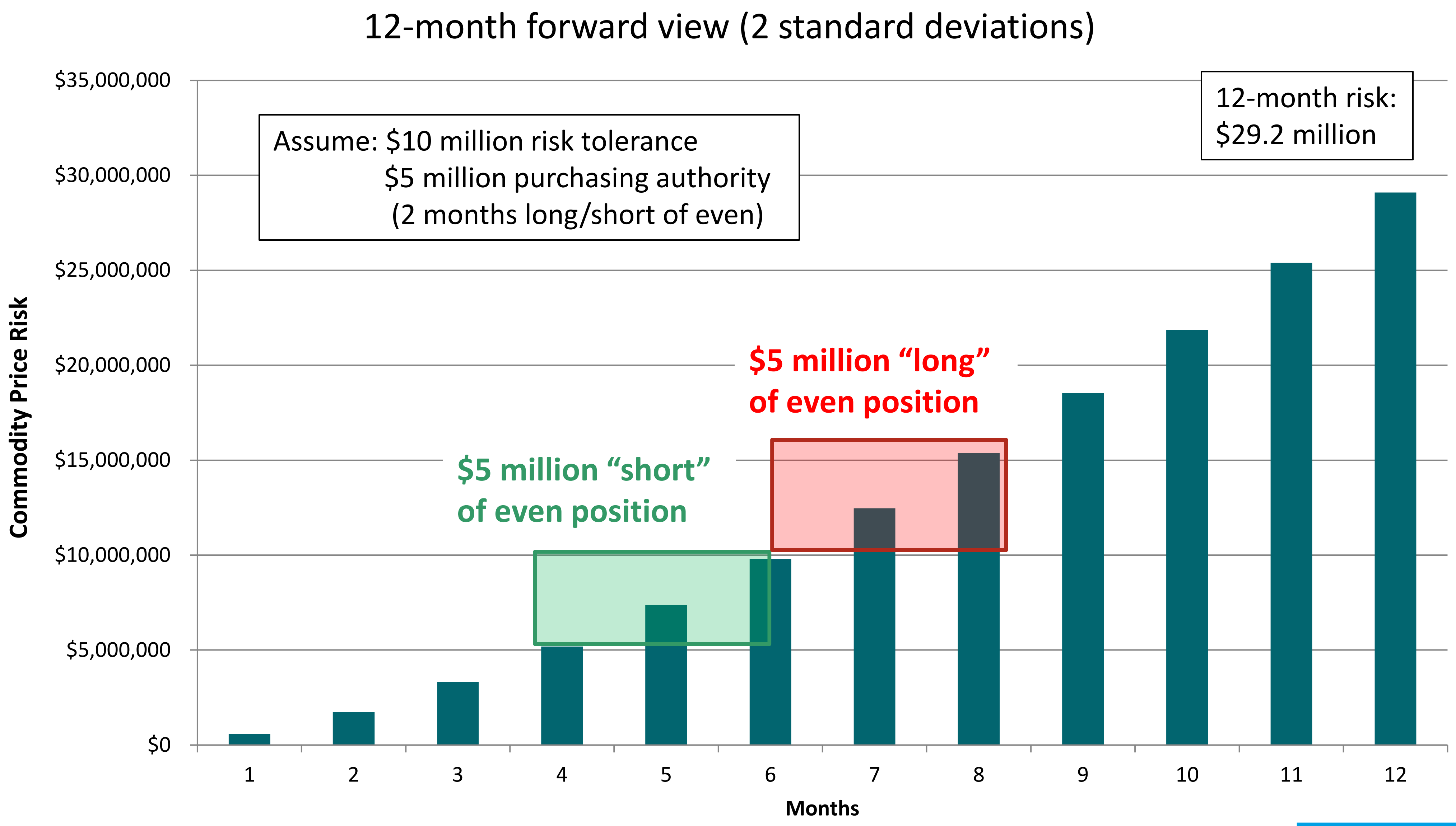
Commodity	Volume	Units	10-Year Historical Volatility	Forward Risk Offset: 6-Month Even Position	Forward Risk: 7-12 Months
				(Millions)	
Wheat	5,500,000	Bushels	35%	$3.9	$7.8
Corn	2,800,000	Bushels	32%	$1.6	$3.0
Oats	2,400,000	Bushels	37%	$0.9	$1.7
Soybean Oil	7,500,000	Lbs	24%	$0.3	$0.5
Sugar	156,000,000	Lbs	15%	$3.3	$6.2
		Total	30%	$10.0	$19.2

Actual 2016 Portfolio Risk = $21.3 million

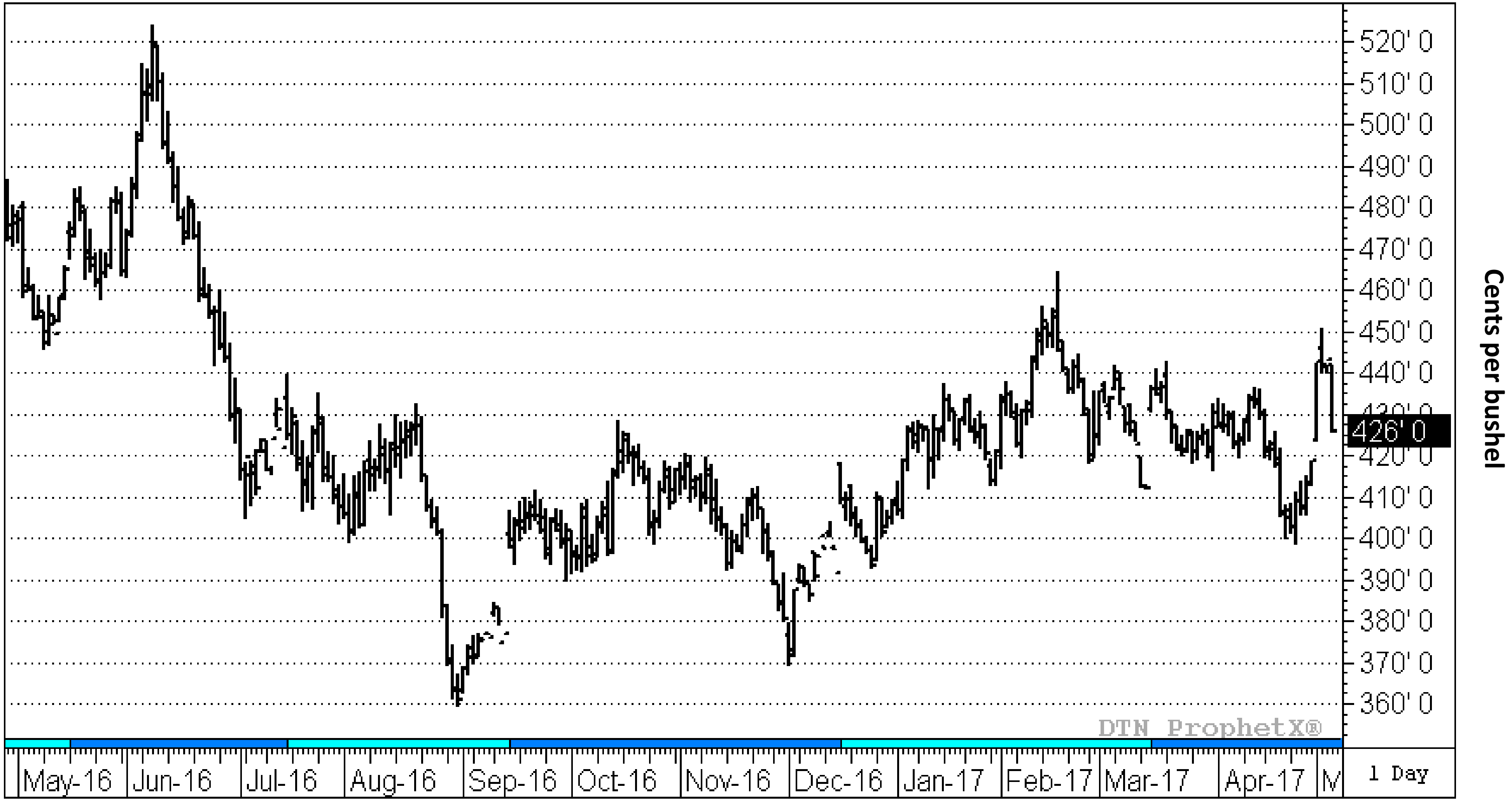
Cumulative risk of the portfolio of ingredients



Cumulative risk of the portfolio of ingredients

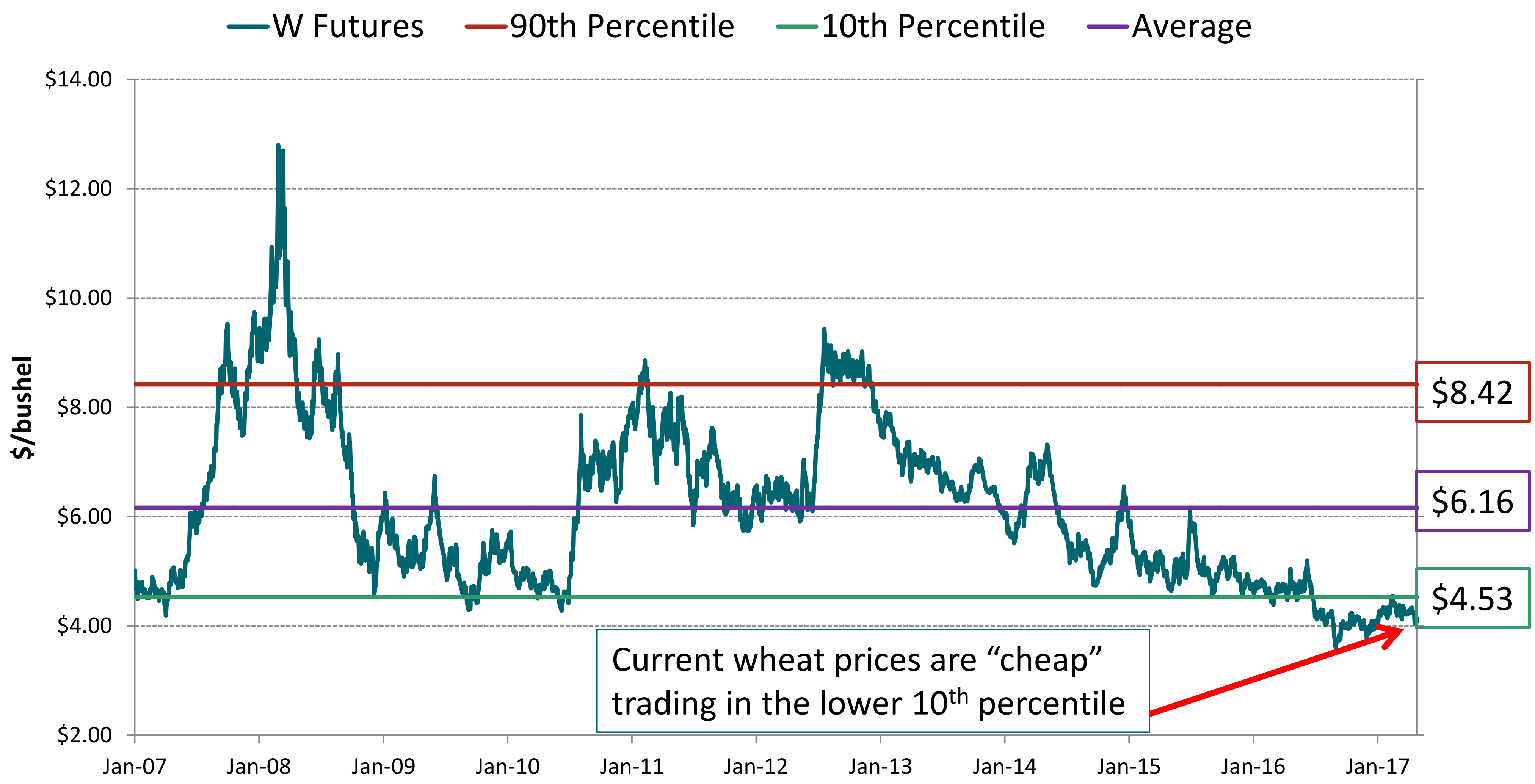


Nearby Chicago wheat futures

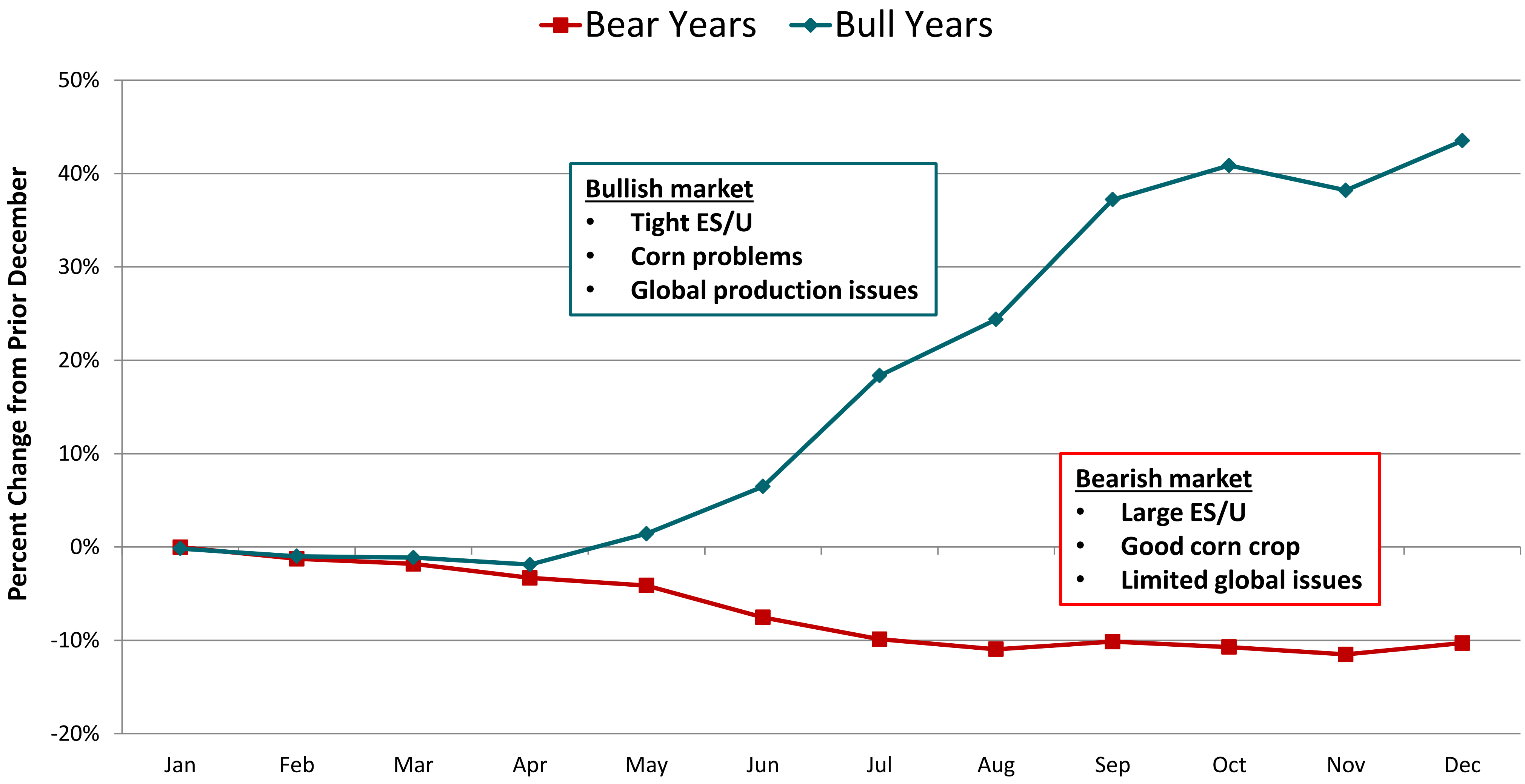


Historical Chicago wheat prices (10 years):

current market = $4.26



Historical Chicago wheat seasonality (1988-2016)

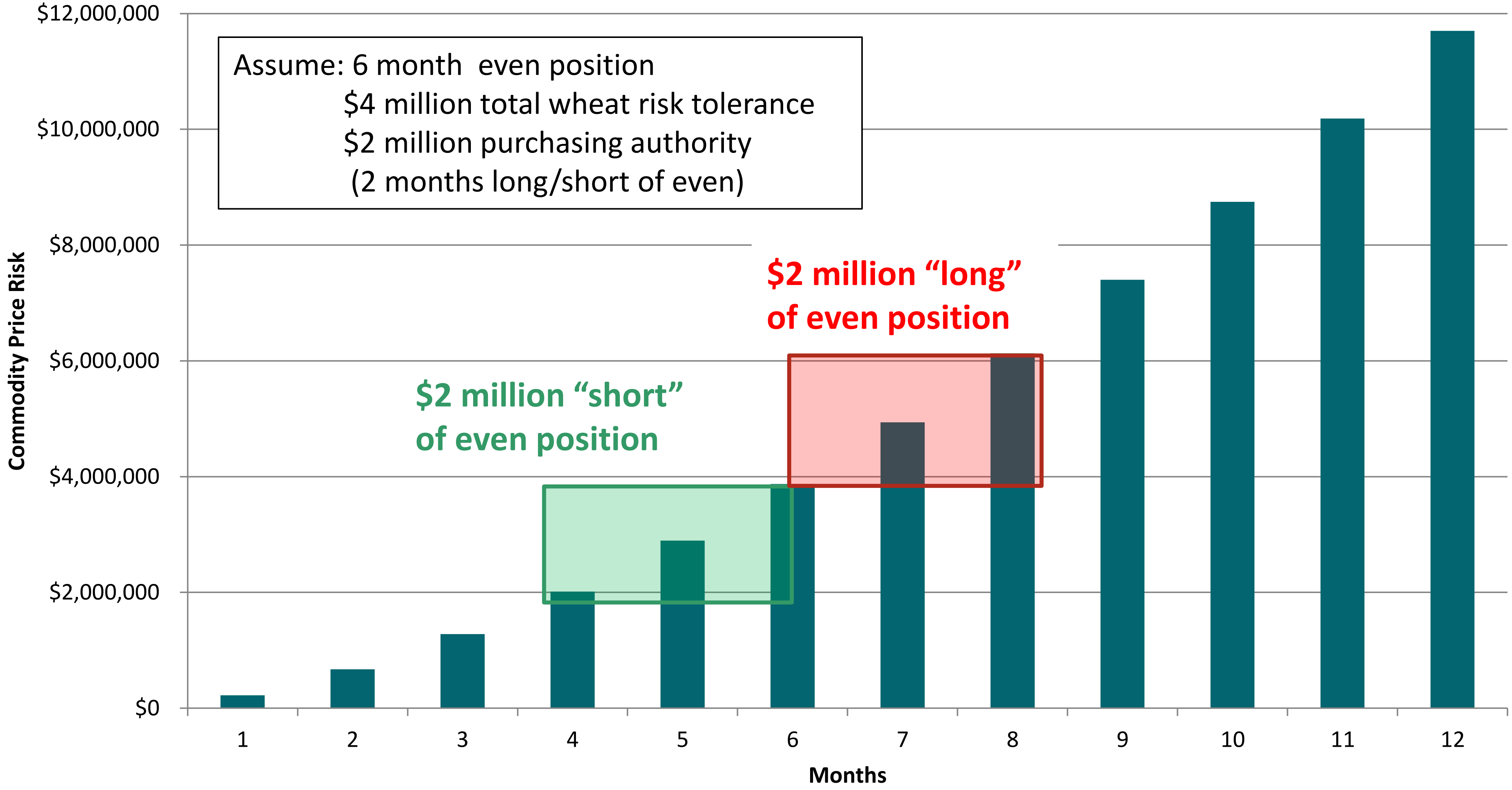


Use of acceptable strategies

Strategy:	Key considerations:	
	Market	**Business**
Futures - Fixed price	• prices are “cheap”	• prices meet business goals and / or “de-risk” the portfolio
Scale in Futures	• prices are in “value” range • seasonality supports lower prices • limited downside risk	• prices meet business goals and /or “de-risk” the portfolio
Call Options	• prices are “expensive” • sustained price rally • large carry in forward market • seasonality supports lower prices	• limit price exposure • downward market participation • “de-risking” of the portfolio • extended cover
Blend of Futures and Call Options	• prices are in the “value” range or higher • extended positions are warranted • large carry in forward market	• limit price exposure • capture current prices • downside protection on a longer position

Cumulative risk of Chicago wheat

12-month forward view (2 standard deviations)

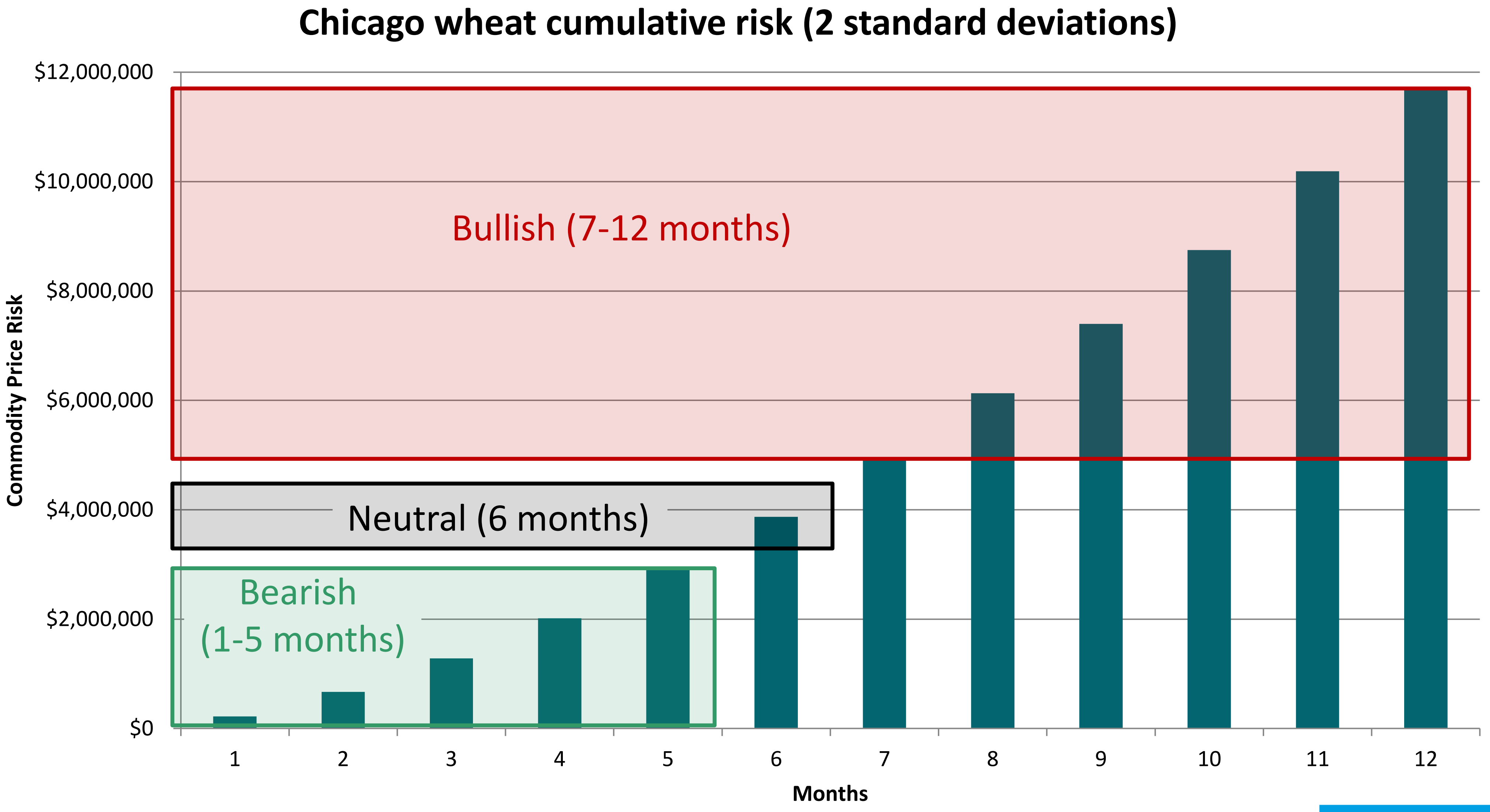


Poll question

- Given your current market bias and current prices, how long would you want to be in today's market assuming no current coverage?

  - Very Bearish = 1-3 months
  - Bearish = 4-5 months
  - Neutral = 6 months
  - Bullish = 7-8 months
  - Very Bullish = 9-12 months

Strategy implications



Strategy implications

Bearish

(1-5 months)

- A position of 1-3 months would require risk committee approval as assumed risk would be greater than your $2 million purchasing authority.
- A position of 4-5 months would NOT require additional approval.
- **Strategy Risk:** Market rallies and you are short of the even position causing margins to deteriorate.

Neutral

(6 months)

- No approval needed as this is in line with the stated even position.
- **Strategy Risk:** None since products have been priced and margins have been locked.

Bullish

(7-12 months)

- A position of 7-8 months would NOT require additional approval.
- A position of 9-12 months would require risk committee approval as assumed risk would be greater than your $2 million purchasing authority.
- **Strategy Risk:** Market declines and you are longer than the even position resulting in lost pricing opportunity and margin erosion.

Summary

- Creating alignment is critical to managing the profit margin risk as a result of volatile commodity markets as it ensures common understanding of business goals.
- Purchasing has the flexibility to do its job and leverage its expertise within a defined set of parameters.
- Senior Management is part of a larger hedge decision given the larger impact to the business.
- Protocols deliver a higher degree of strategy success as all pertinent parties are on the same page.
- Key agreements around alignment should be captured in a risk policy and reviewed annually.

Thank you!

- If you have any additional questions or requests for information please contact us at info@grmcorp.com

- Visit us at : www.grmcorp.com

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