

# Economic Considerations for On-Farm Grain Storage

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# Advantages

- **Basis & Price – Post Harvest**
- **Avoid Dockage on Wet Grain**
- **Reduce Harvest Losses**
- **Early Harvest – Basis & Cash**
- **Carry in the Market**
- **Reduced bottle necks at Elevator & Farm**
- **Potential for Identify Preservation**
  - **Non-gmo corn & beans feed mill seed prod.**
- **Flexibility & more marketing Options**
- **Wheat – Double crop Soybeans**



# Fixed Cost of Grain Storage

Grain Bin and Equipment	\$80,000	
Bushels of Storage	50,000	
Annual % Cost	10.5%	
Cost/Bushel of storage	\$1.60	$(\$80,000/50,000)$ Investment Cost per Bushel
Cost/Bushel/Year	\$0.17	$(\$1.60 * 10.5\%)$ Annual Investment Cost per Bushel

# Fixed Costs of Shivvers Drying System – DIRT15

- Depreciation      8.3%      12 Year Life
- Interest            3.0%      6% Interest or 3%  
on Ave. Invest.
- Repairs            6.0%      Investment
- Taxes &  
Insurance          2.0%      Investment
- Total Fixed  
Costs                19.3%      Annual % Cost

# Fixed Cost of Drying System

Shivvers, Grain Bin and Equipment	\$100,000	
Bushels Dried	130,000	17,000 Bushel Bin
Annual % Cost	19.3%	
Cost/Bushel of storage	\$0.77	(\$100,000/130,000) Investment Cost per Bushel
Cost/Bushel/Year	\$0.15	(\$0.77 * 19.3%) Annual Investment Cost per Bushel

# Economics of Drying Corn

- **Fuel: .022 gallons of LP for each 1% of moisture removed X price of LP  
Gas/gallon X points of water removed**
- **Cost of extra handling and transportation: 5 cents per bushel.**

**Drying Corn - 25% moisture corn to 15% (10 points) and LP gas at \$1.50 per gallon.**

- Fuel:  $.022 \times \$1.50 \times 10 \text{ points} = 33$  cents/bushel**
- 5 cents Handling and Transportation**
- Total Variable cost = 38 cents/bu**



# Returns to Grain Drying

Base Moisture – 15%, Corn Price - \$4.50, Moisture Discount – 1% to 18% & then 1.5% of price, L.P. Gas - \$1.50

Grain Moisture	Shrink	Moisture Discount Cnts/bu	Value Wet Corn	Returns Wet Corn	LP Gas Cnts/bu	Net to Drying Cnts/bu
18%	4.03%	29	18	-11	10	1
19%	5.21%	43	23	-20	13	7
20%	6.38%	56	29	-27	17	10
22%	8.74%	83	39	-44	23	21
24%	11.0%	110	50	-60	30	30
26%	13.4%	137	61	-76	36	40

# Returns to Grain Drying

Base Moisture – 15%, Corn Price - \$4.50, Moisture Discount – 1% to 18% & then 1.5% of price, L.P. Gas - \$3.00

Grain Moisture	Shrink	Moisture Discount Cnts/bu	Value Wet Corn	Returns Wet Corn	LP Gas Cnts/bu	Net to Drying Cnts/bu
18%	4.03%	29	18	-11	20	-9
19%	5.21%	43	23	-20	26	-6
20%	6.38%	56	29	-27	33	-6
22%	8.74%	83	39	-44	46	-2
24%	11.0%	110	50	-60	59	-1
26%	13.4%	137	61	-76	73	3



# **Corn Post Harvest**

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February 28, 2014

# Return to Storage From Change in Basis

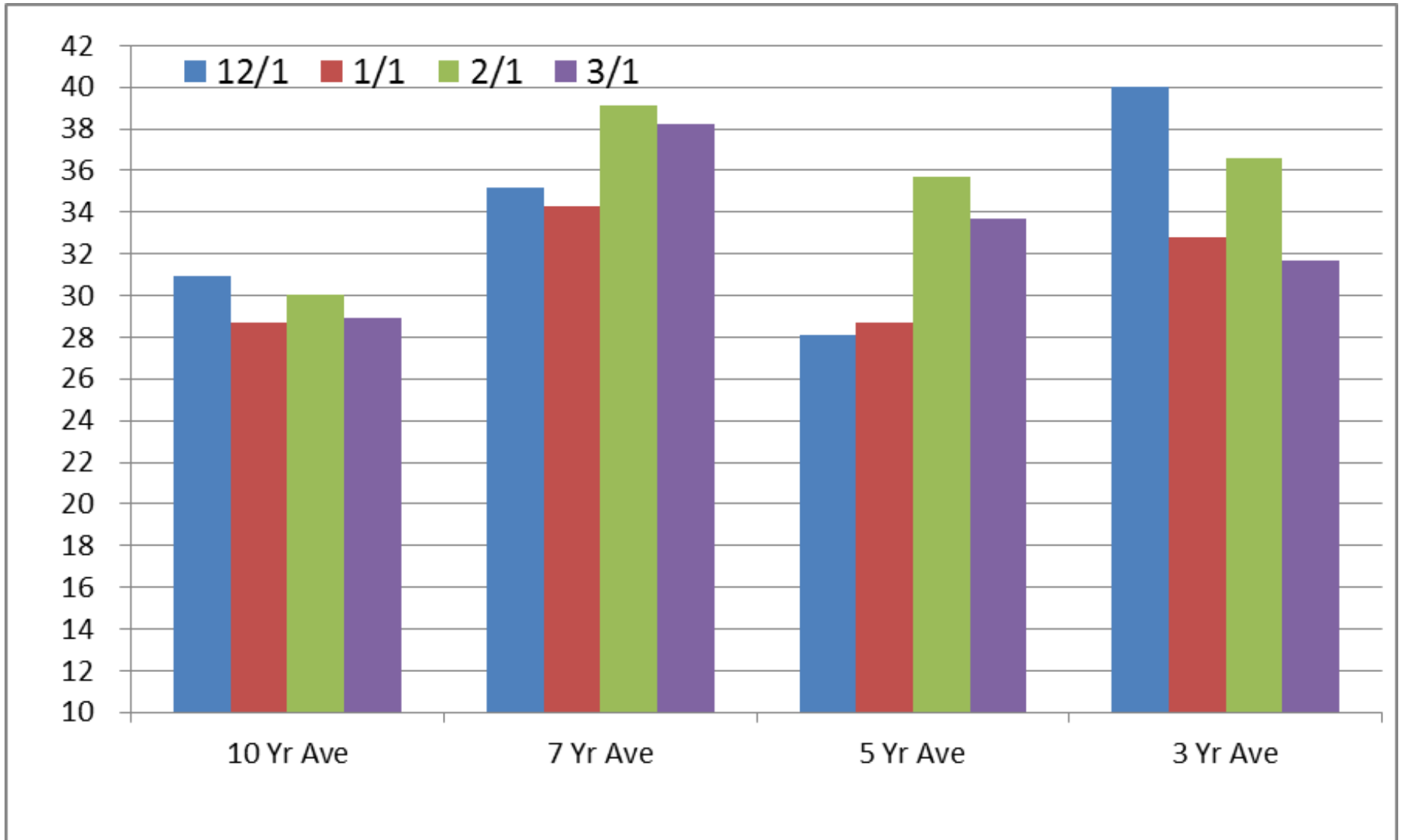
## SEMO Cash Corn Barge Prices 9/1\*

### March Futures

Cents/bushel

	12/1	12/15	1/1	1/15	2/1	2/15	3/1
Year	-----	-----	-----	-----	-----	-----	-----
2013-14	21	29	28	26	28	27	
2012-13	70	48	60	57	54	62	49
2011-12	26	20	16	29	32	28	16
2010-11	25	23	22	5	23	23	30
2009-10	-4	-17	-4	10	9	18	17
2008-09	24	41	49	33	60	62	56
2007-08	78	73	78	72	79	77	75
2006-07	28	12	18	3	16	21	24
2005-06	65	69	58	61	58	60	68
2004-05	14	11	18	16	12	7	7
2003-04	-16	-21	-29	-46	-43	-48	-54
2002-03	14	16	14	17	14	11	12
10 Yr Ave	31	26	29	24	30	31	29
7 Yr Ave	35	29	34	30	39	42	38
5 Yr Ave	28	23	29	27	36	39	34
3 Yr Ave	40	30	33	31	37	38	32

# Corn Storage Returns from the Change in Basis from 9/1 – March Futures

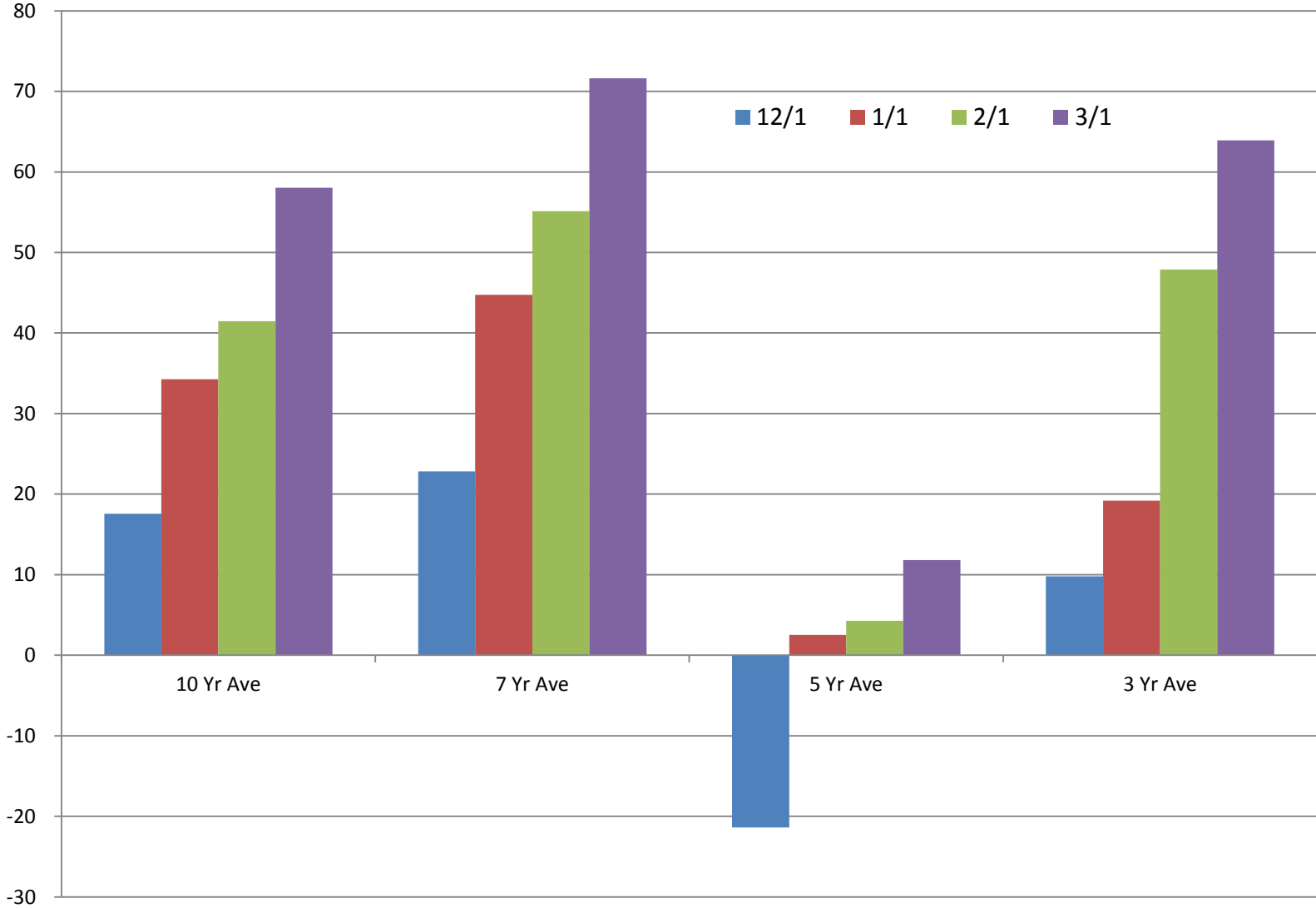


# Return to Storage From Change in Cash Price

## SEMO Cash Corn Barge Prices 9/1\*

	Cents/bushel						
	12/1	12/15	1/1	1/15	2/1	2/15	3/1
Year	-----	-----	-----	-----	-----	-----	-----
2013-14	-42	-36	-39	-36	-24	-11	
2012-13	17	-36	-57	-20	-18	-47	-35
2011-12	-118	-146	-69	-110	-68	-86	-70
2010-11	131	147	183	205	229	254	297
2009-10	78	58	82	49	35	52	55
2008-09	-215	-172	-127	-190	-157	-177	-188
2007-08	113	143	172	212	211	223	262
2006-07	154	120	128	145	153	168	180
2005-06	35	40	44	36	41	48	58
2004-05	-34	-35	-31	-39	-42	-44	-33
2003-04	15	20	16	20	30	43	54
2002-03	-23	-22	-26	-29	-25	-28	-31
10 Yr Ave	18	14	34	31	41	44	58
7 Yr Ave	23	16	45	42	55	55	72
5 Yr Ave	-21	-30	3	-13	4	-1	12
3 Yr Ave	10	-12	19	25	48	41	64

# Corn Storage Returns from the Change in Cash Price – 9/1



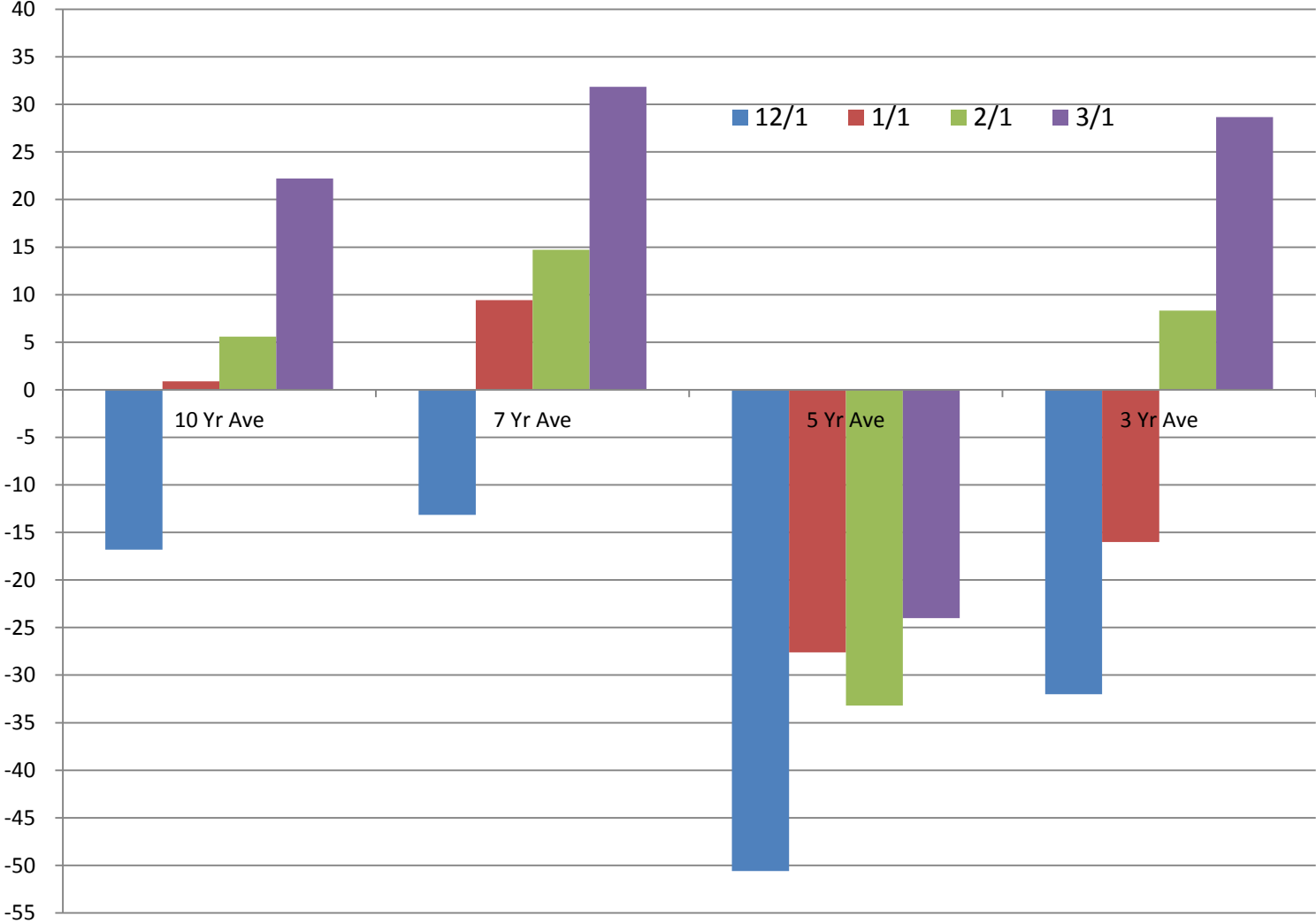
## Change in March Corn Futures from 9/1

Cents/bushel

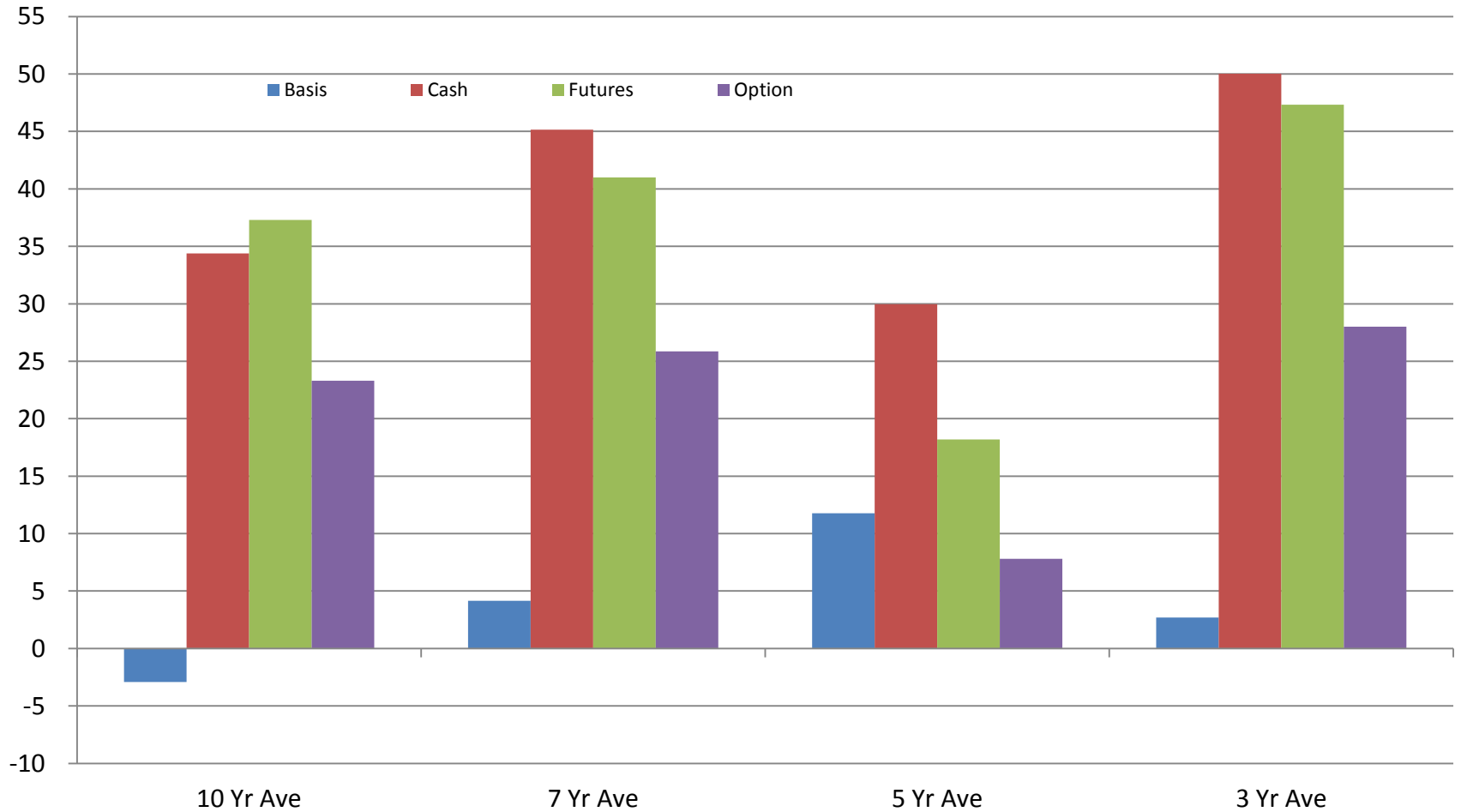
	12/1	12/15	1/1	1/15	2/1	2/15	3/1
	Futures	Futures	Futures	Futures	Futures	Futures	Futures
Year	Returns	Returns	Returns	Returns	Returns	Returns	Returns
Year	-----	-----	-----	-----	-----	-----	-----
2013-14	-63	-65	-67	-62	-52	-38	-488
2012-13	-53	-84	-117	-77	-72	-109	-84
2011-12	-149	-172	-92	-147	-109	-124	-97
2010-11	106	124	161	200	206	231	267
2009-10	82	75	86	39	26	34	38
2008-09	-239	-213	-176	-223	-217	-239	-244
2007-08	35	70	94	140	132	146	187
2006-07	126	108	110	142	137	147	156
2005-06	-30	-29	-14	-25	-17	-12	-10
2004-05	-48	-46	-49	-55	-54	-51	-40
2003-04	2	7	6	22	24	37	49
2002-03	-39	-41	-43	-49	-43	-42	-46
-----	-----	-----	-----	-----	-----	-----	-----
10 Yr Ave	-17	-16	1	2	6	6	22
7 Yr Ave	-13	-13	9	11	15	12	32
5 Yr Ave	-51	-54	-28	-42	-33	-41	-24
3 Yr Ave	-32	-44	-16	-8	8	-1	29



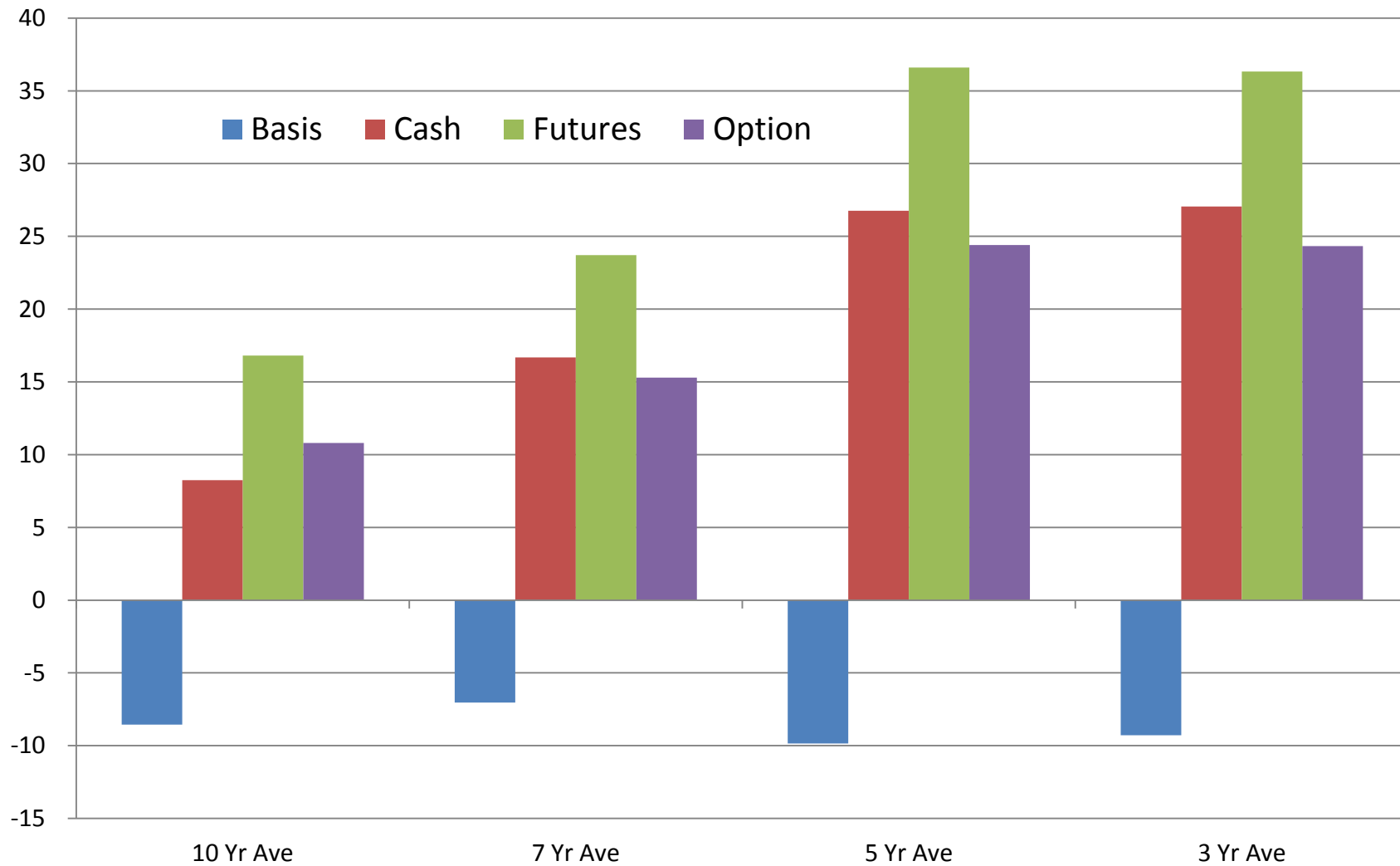
# Change in March Corn Futures from September 1



# Returns to Corn Basis, Cash, Futures, Options: Dec. 1 - March 1



# Returns to Corn Basis, Cash, Futures, Options: Jan. 1 - April 1





# **Soybeans Post-Harvest**

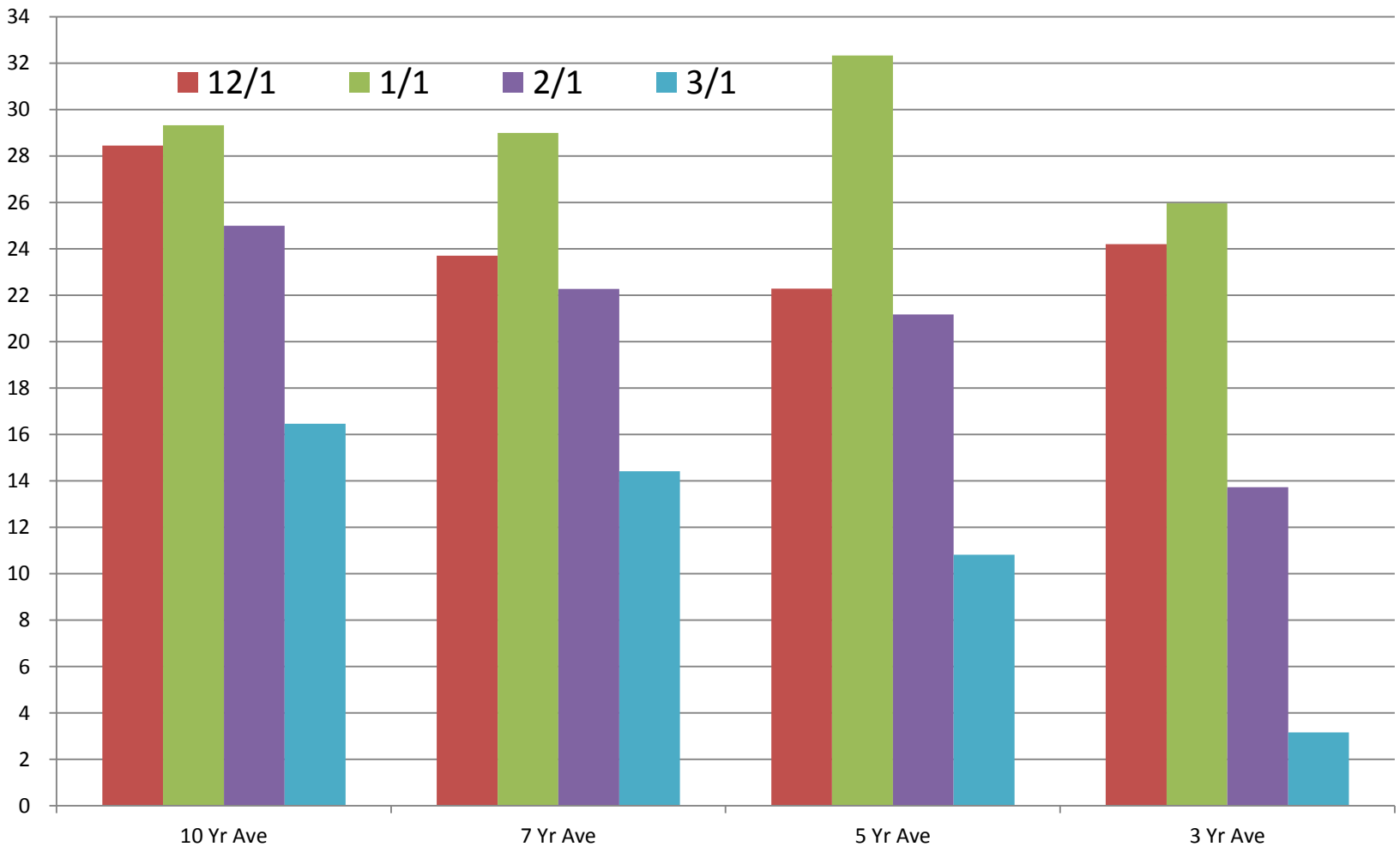
**David Reinbott**

February 28, 2014

**Return to Storage From Change in Basis**  
**SEMO Cash Soybeans Barge Prices 10/1\***  
**March Futures**

	12/1	12/15	1/1	1/15	2/1	2/15	3/1
<b>Year</b>	-----	-----	-----	-----	-----	-----	-----
<b>2013-14</b>	<b>15</b>	<b>24</b>	<b>18</b>	<b>20</b>	<b>-25</b>	<b>-10</b>	
<b>2012-13</b>	<b>4</b>	<b>20</b>	<b>25</b>	<b>9</b>	<b>-24</b>	<b>-30</b>	<b>-43</b>
<b>2011-12</b>	<b>45</b>	<b>41</b>	<b>35</b>	<b>47</b>	<b>52</b>	<b>44</b>	<b>42</b>
<b>2010-11</b>	<b>23</b>	<b>19</b>	<b>18</b>	<b>-4</b>	<b>14</b>	<b>3</b>	<b>10</b>
<b>2009-10</b>	<b>-31</b>	<b>-28</b>	<b>-3</b>	<b>-10</b>	<b>-19</b>	<b>-16</b>	<b>-27</b>
<b>2008-09</b>	<b>70</b>	<b>89</b>	<b>86</b>	<b>73</b>	<b>83</b>	<b>85</b>	<b>71</b>
<b>2007-08</b>	<b>25</b>	<b>14</b>	<b>13</b>	<b>-9</b>	<b>33</b>	<b>25</b>	<b>30</b>
<b>2006-07</b>	<b>30</b>	<b>28</b>	<b>28</b>	<b>8</b>	<b>17</b>	<b>18</b>	<b>17</b>
<b>2005-06</b>	<b>73</b>	<b>66</b>	<b>54</b>	<b>57</b>	<b>55</b>	<b>61</b>	<b>63</b>
<b>2004-05</b>	<b>39</b>	<b>44</b>	<b>41</b>	<b>48</b>	<b>44</b>	<b>29</b>	<b>16</b>
<b>2003-04</b>	<b>7</b>	<b>-6</b>	<b>-6</b>	<b>-19</b>	<b>-5</b>	<b>-4</b>	<b>-15</b>
<b>2002-03</b>	<b>12</b>	<b>14</b>	<b>13</b>	<b>17</b>	<b>11</b>	<b>3</b>	<b>-1</b>
<b>-----</b>	<b>-----</b>	<b>-----</b>	<b>-----</b>	<b>-----</b>	<b>-----</b>	<b>-----</b>	<b>-----</b>
<b>10 Yr Ave</b>	<b>28</b>	<b>29</b>	<b>29</b>	<b>20</b>	<b>25</b>	<b>21</b>	<b>16</b>
<b>7 Yr Ave</b>	<b>24</b>	<b>26</b>	<b>29</b>	<b>16</b>	<b>22</b>	<b>18</b>	<b>14</b>
<b>5 Yr Ave</b>	<b>22</b>	<b>28</b>	<b>32</b>	<b>23</b>	<b>21</b>	<b>17</b>	<b>11</b>
<b>3 Yr Ave</b>	<b>24</b>	<b>27</b>	<b>26</b>	<b>17</b>	<b>14</b>	<b>6</b>	<b>3</b>

# Soybean Storage Returns from the Change in Basis from 10/1 – March Futures

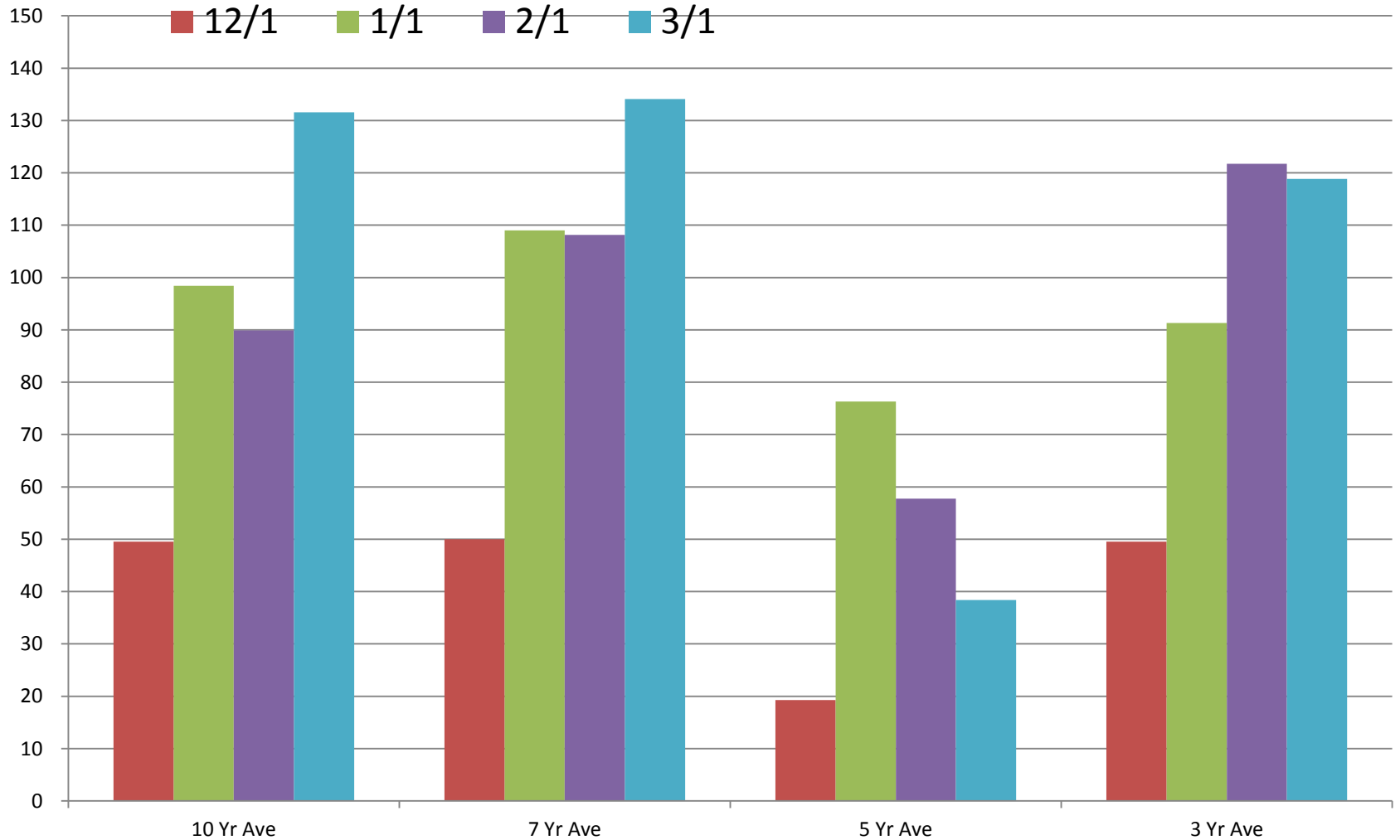


# Return to Storage From Change in Cash Price

## SEMO Cash Soybeans Barge Prices 10/1\*

	12/1	12/15	1/1	1/15	2/1	2/15	3/1
Year	-----	-----	-----	-----	-----	-----	-----
2013-14	74	103	44	96	27	112	
2012-13	-78	-22	-113	-107	-80	-136	-108
2011-12	-14	-36	65	33	69	107	161
2010-11	240	252	322	334	377	296	303
2009-10	110	109	130	39	-34	25	2
2008-09	-162	-147	-23	-19	-43	-98	-166
2007-08	103	170	242	273	300	379	555
2006-07	151	129	139	146	168	206	192
2005-06	41	64	83	28	35	48	41
2004-05	23	41	29	14	3	16	73
2003-04	82	88	108	132	104	163	263
2002-03	38	23	45	18	30	28	27
-----	-----	-----	-----	-----	-----	-----	-----
10 Yr Ave	50	65	98	87	90	101	132
7 Yr Ave	50	65	109	100	108	111	134
5 Yr Ave	19	31	76	56	58	39	38
3 Yr Ave	50	65	91	87	122	89	119

# Soybean Storage Returns Change in Cash Price 10/1



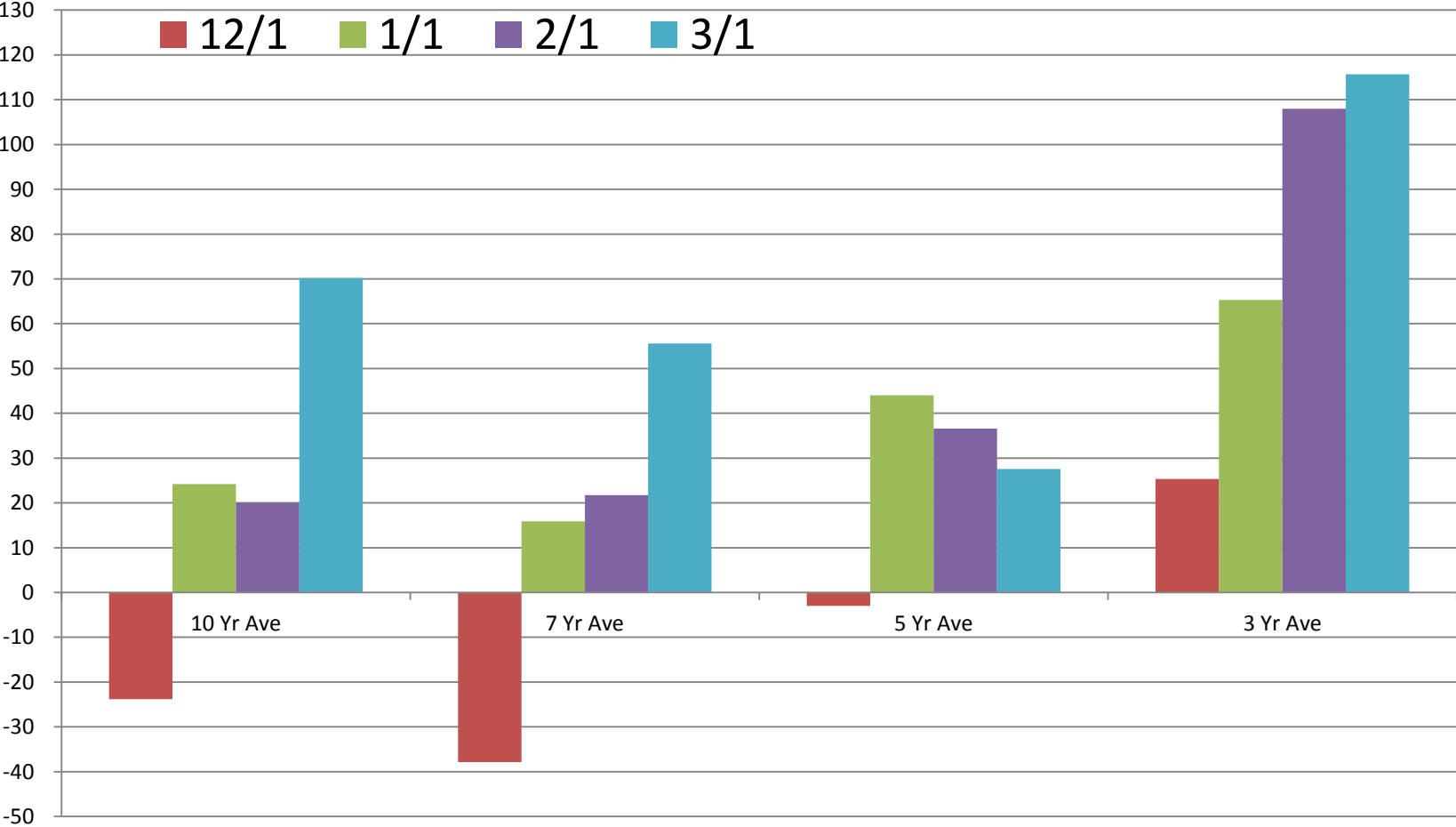


# Change in March Soybean Futures from 10/1

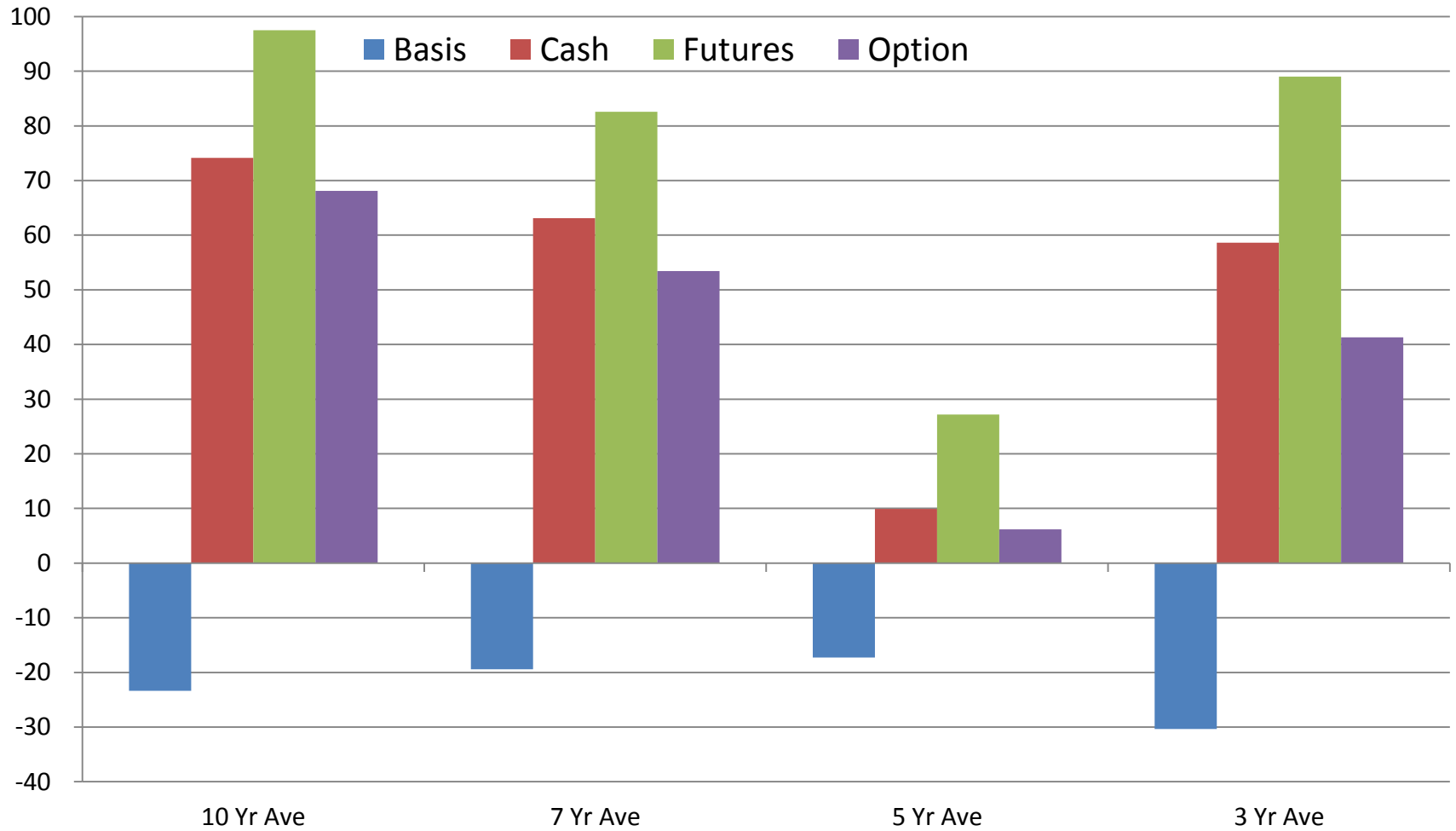
Cents/bushel

	12/1	12/15	1/1	1/15	2/1	2/15	3/1
	Futures	Futures	Futures	Futures	Futures	Futures	Futures
Year	Returns	Returns	Returns	Returns	Returns	Returns	Returns
Year	-----	-----	-----	-----	-----	-----	-----
2013-14	53	72	17	65	40	108	
2012-13	-82	-42	-138	-116	-56	-106	-65
2011-12	-59	-77	30	-14	17	63	119
2010-11	217	233	304	338	363	293	293
2009-10	141	137	133	49	-15	41	28
2008-09	-232	-236	-109	-92	-126	-183	-237
2007-08	78	156	229	282	267	354	525
2006-07	-328	-348	-338	-311	-298	-261	-274
2005-06	-32	-2	29	-29	-20	-13	-22
2004-05	-16	-3	-12	-34	-41	-13	57
2003-04	75	94	114	151	109	167	278
2002-03	26	9	32	1	19	25	28
-----	-----	-----	-----	-----	-----	-----	-----
10 Yr Ave	-24	-9	24	22	20	34	70
7 Yr Ave	-38	-25	16	19	22	29	56
5 Yr Ave	-3	3	44	33	37	22	28
3 Yr Ave	25	38	65	69	108	83	116

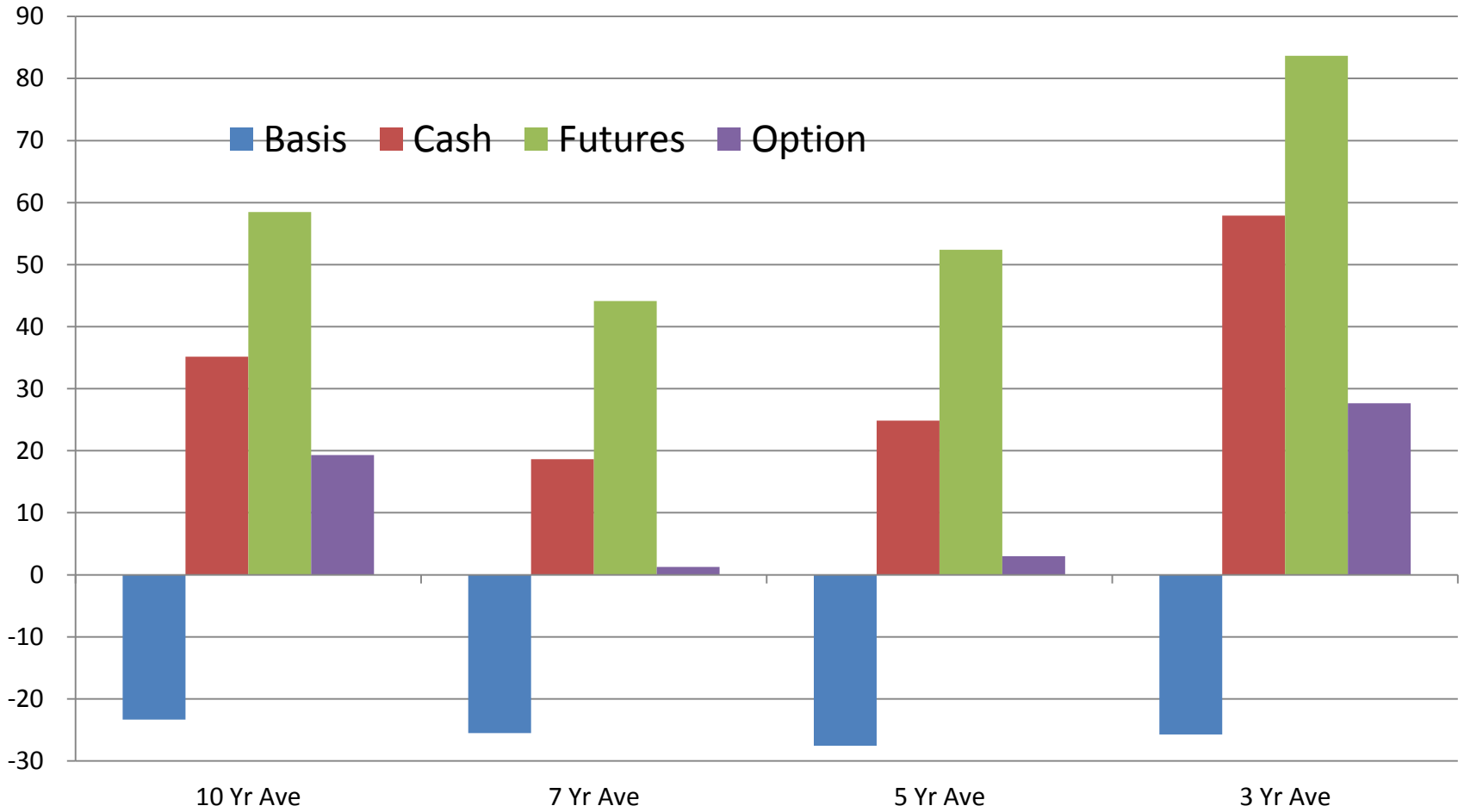
# Change in March Soybean Futures from October 1



# Returns to Soybean Basis, Cash, Futures, Options: Dec. 1 - March 1



# Returns to Soybean Basis, Cash, Futures, Options: Jan. 1 - May 1



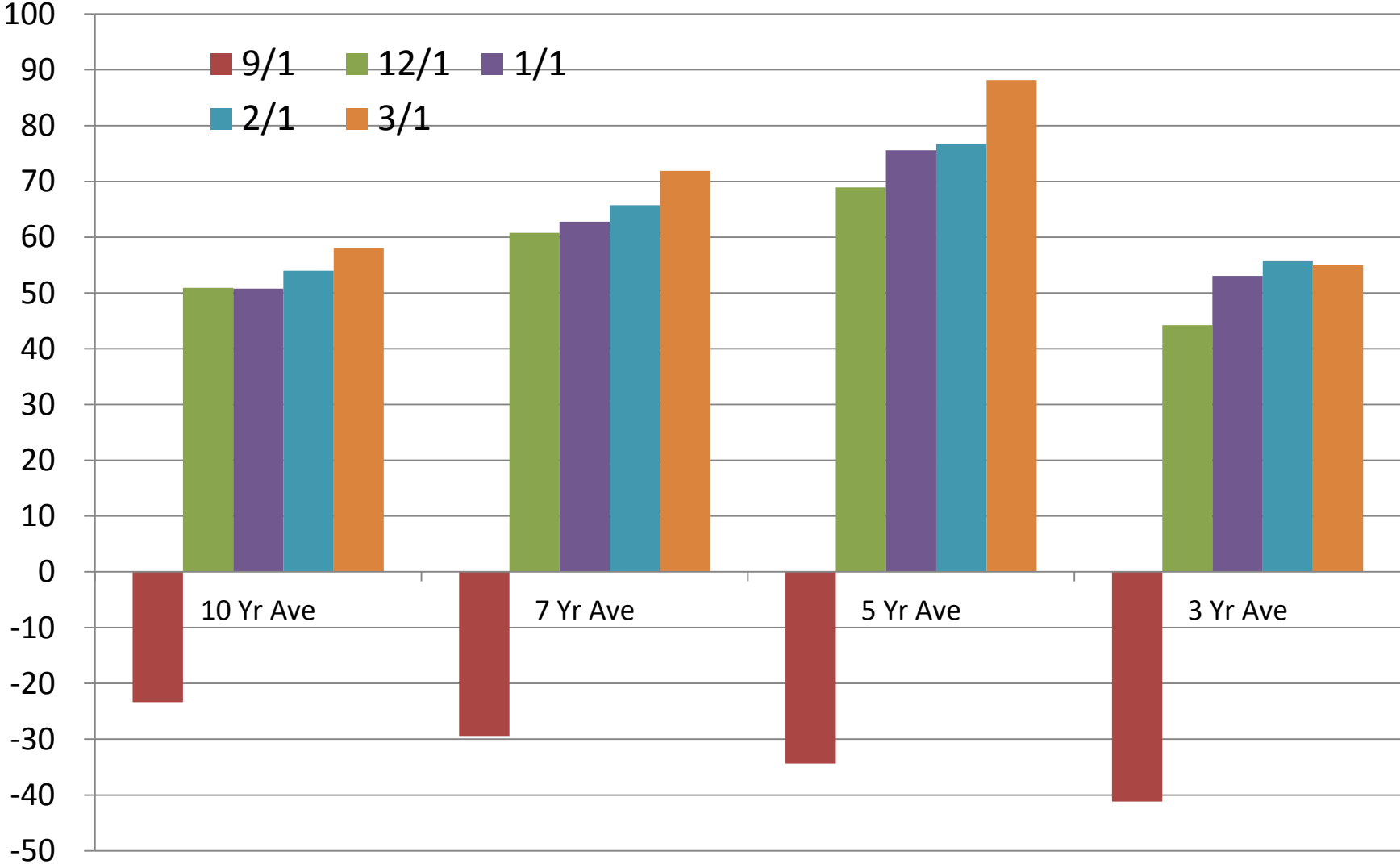


# **Wheat Post-Harvest**

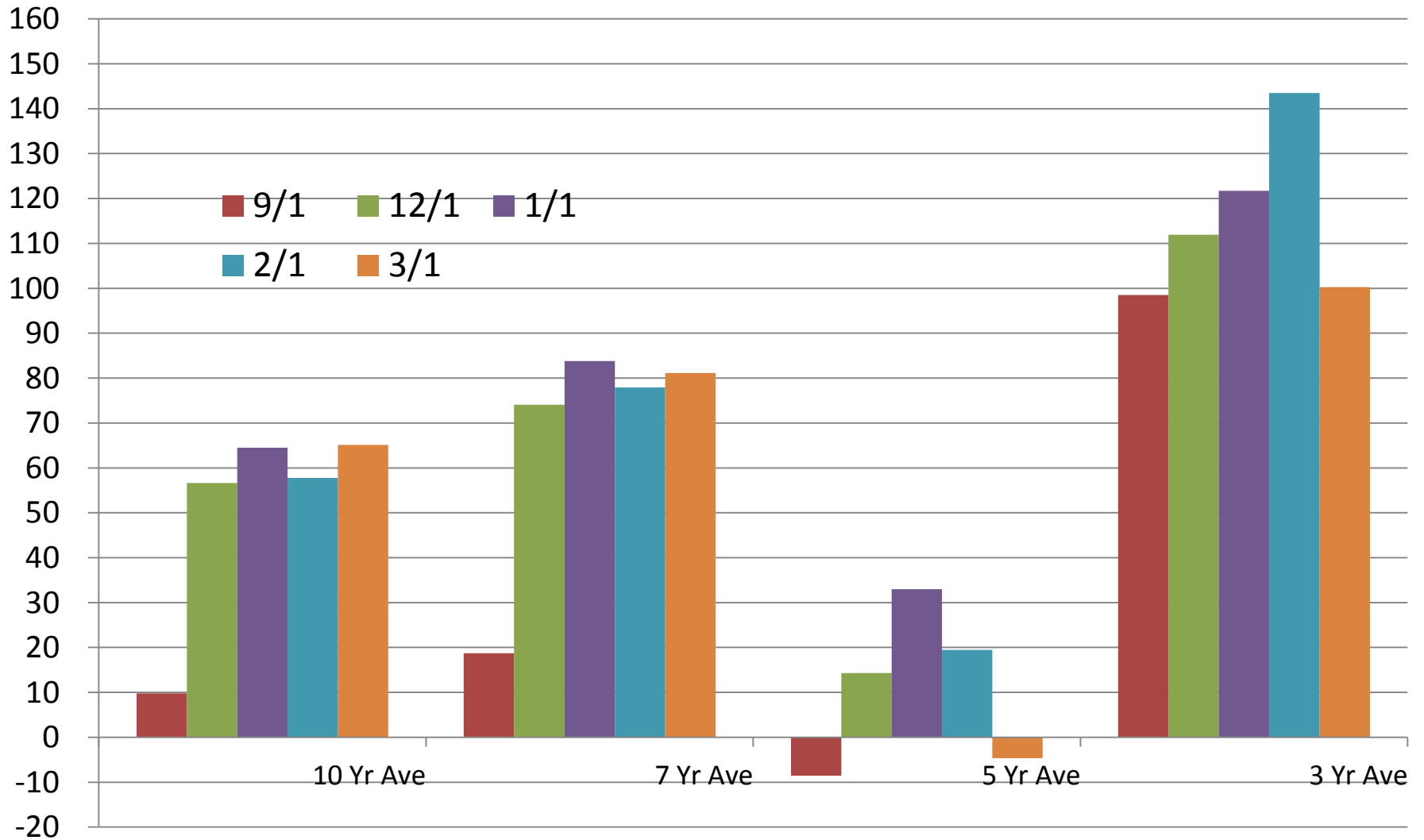
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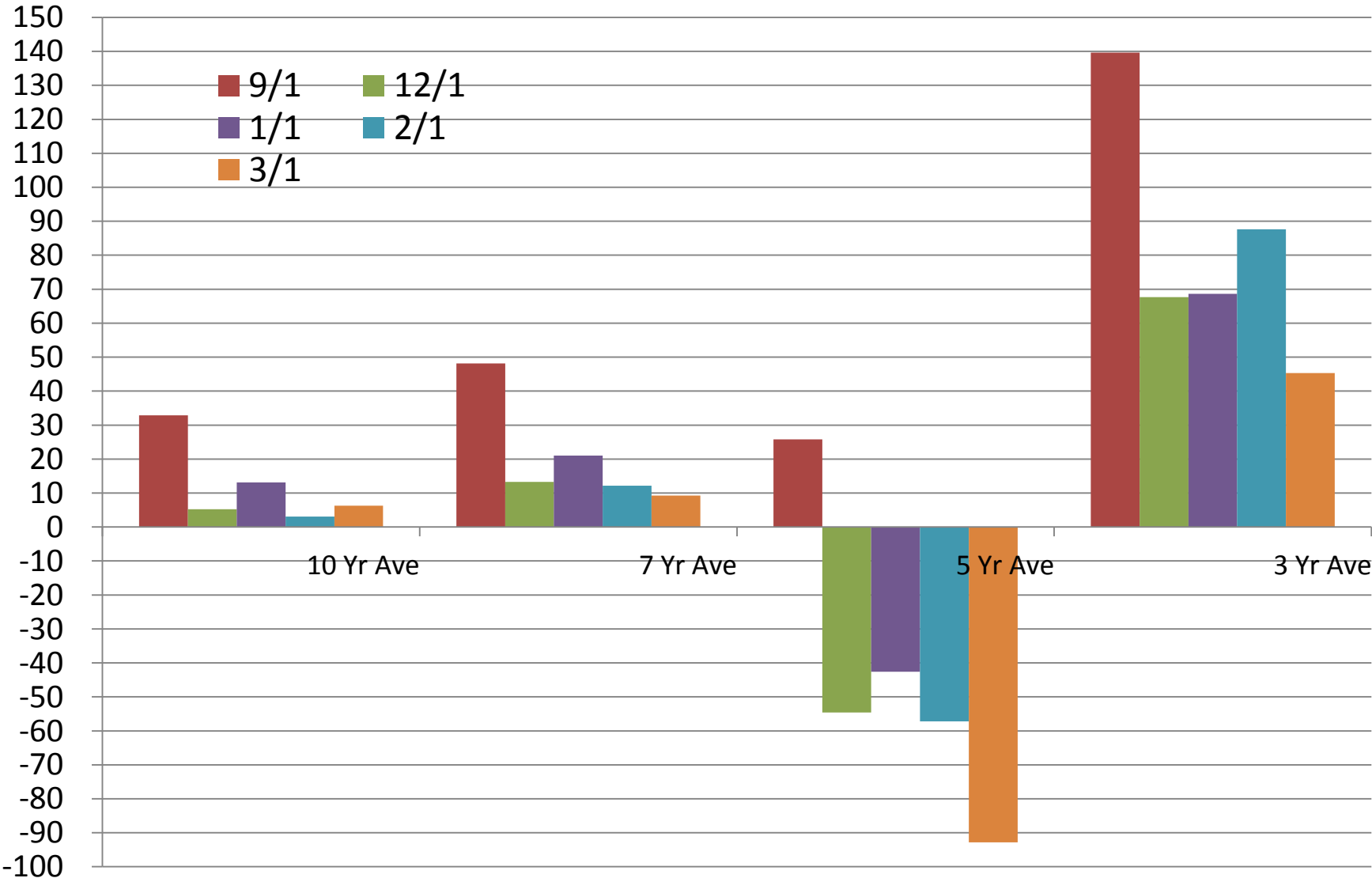
# Wheat Storage Returns from the Change in Basis 6/15 – March Futures



# Wheat Storage Returns from change in Cash Price - 6/15



# Change in March Futures from 6/15





# Questions?

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