



PJM RTO Load Forecast Model Accuracy

Load Analysis Subcommittee
November 27, 2018

- Forecast model being evaluated is the current specification that went into effect beginning with the 2016 Load Forecast Report
- Forecast model is solved using up-to-date information, to help separate out the error attributable to forecast variables.
- Accuracy assessment is performed using the discrete forecast adjustments from Table B-9 for each forecast.

- Loads used in both the estimation and forecast period are loads reconstituted with PJM's hourly distributed solar generation estimates.
- The error calculation is the forecasted load less the back-casted solar estimate for the hour being examined versus the actual load in that hour.



Forecast Parameter Summary

| <i>Forecast Vintage</i> | <i>Estimation Through</i> | <i>Economics</i> | <i>Equipment Saturation/Efficiency</i> | <i>Forecast Adjustments</i> |
|-------------------------|---------------------------|------------------|--|-----------------------------|
| 2009 | August 2008 | September 2018 | 2018 | 2009 |
| 2010 | August 2009 | September 2018 | 2018 | 2010 |
| 2011 | August 2010 | September 2018 | 2018 | 2011 |
| 2012 | August 2011 | September 2018 | 2018 | 2012 |
| 2013 | August 2012 | September 2018 | 2018 | 2013 |
| 2014 | August 2013 | September 2018 | 2018 | 2014 |
| 2015 | August 2014 | September 2018 | 2018 | 2015 |
| 2016 | August 2015 | September 2018 | 2018 | 2016 |
| 2017 | August 2016 | September 2018 | 2018 | 2017 |
| 2018 | August 2017 | September 2018 | 2018 | 2018 |

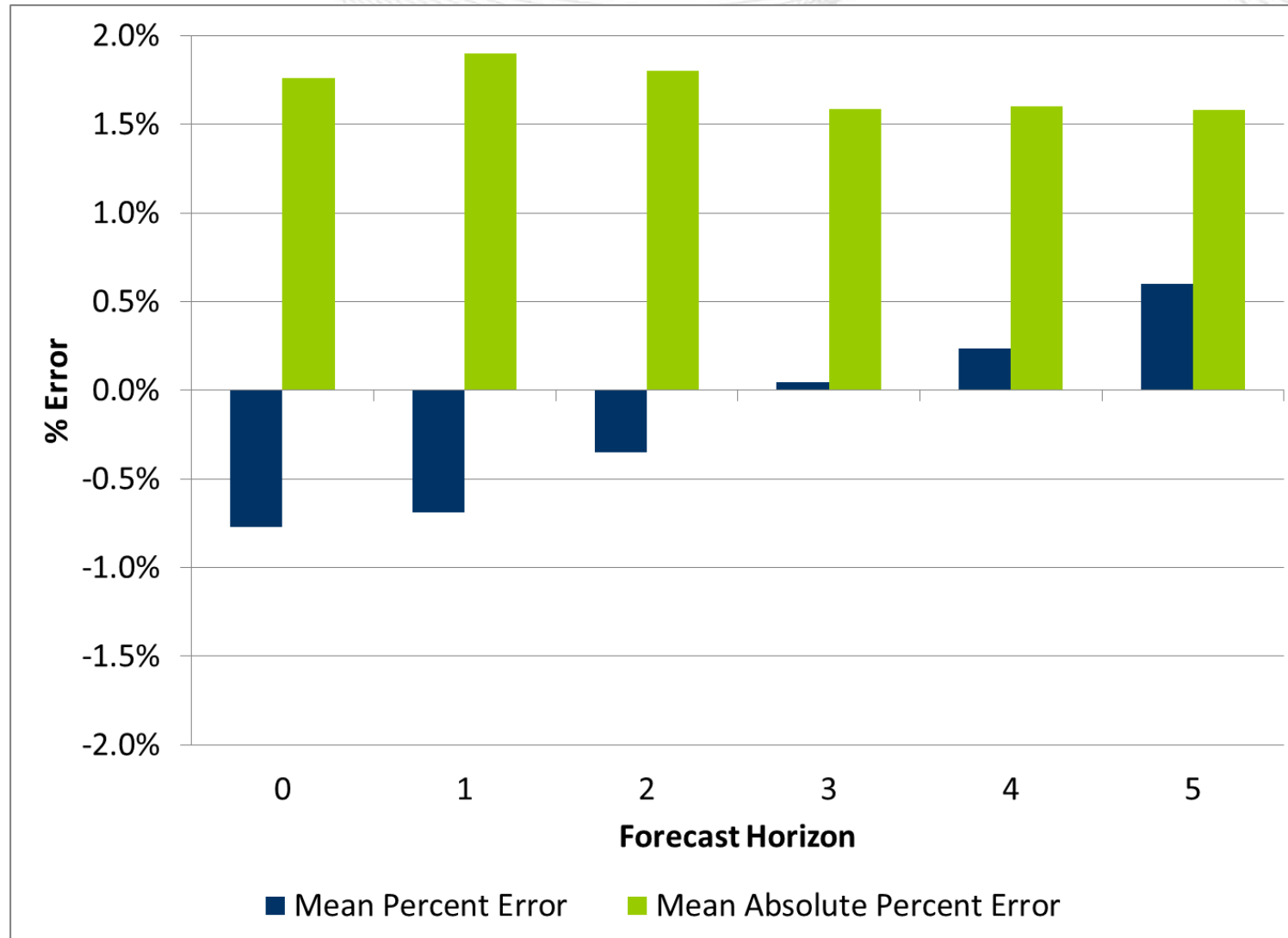


Summer Evaluation Periods

Forecast Years Out

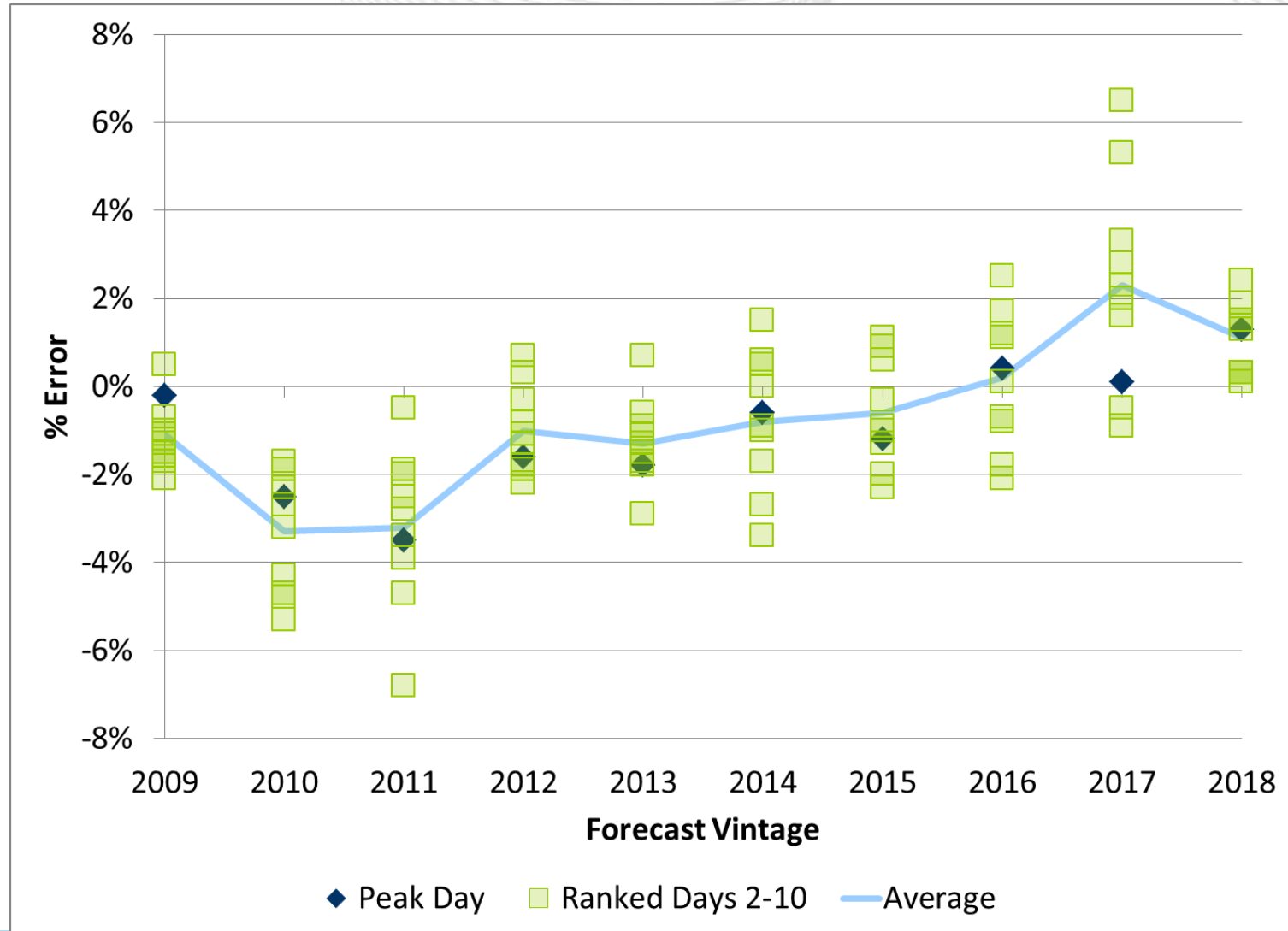
| | Zero | One | Two | Three | Four | Five | |
|----------------------|------|------|------|-------|------|------|------|
| 2009 Forecast | | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 |
| 2010 Forecast | | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 |
| 2011 Forecast | | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 |
| 2012 Forecast | | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 |
| 2013 Forecast | | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 |
| 2014 Forecast | | 2014 | 2015 | 2016 | 2017 | 2018 | |
| 2015 Forecast | | 2015 | 2016 | 2017 | 2018 | | |
| 2016 Forecast | | 2016 | 2017 | 2018 | | | |
| 2017 Forecast | | 2017 | 2018 | | | | |
| 2018 Forecast | | 2018 | | | | | |

Summer Forecast Error on Top 10 Days Summary



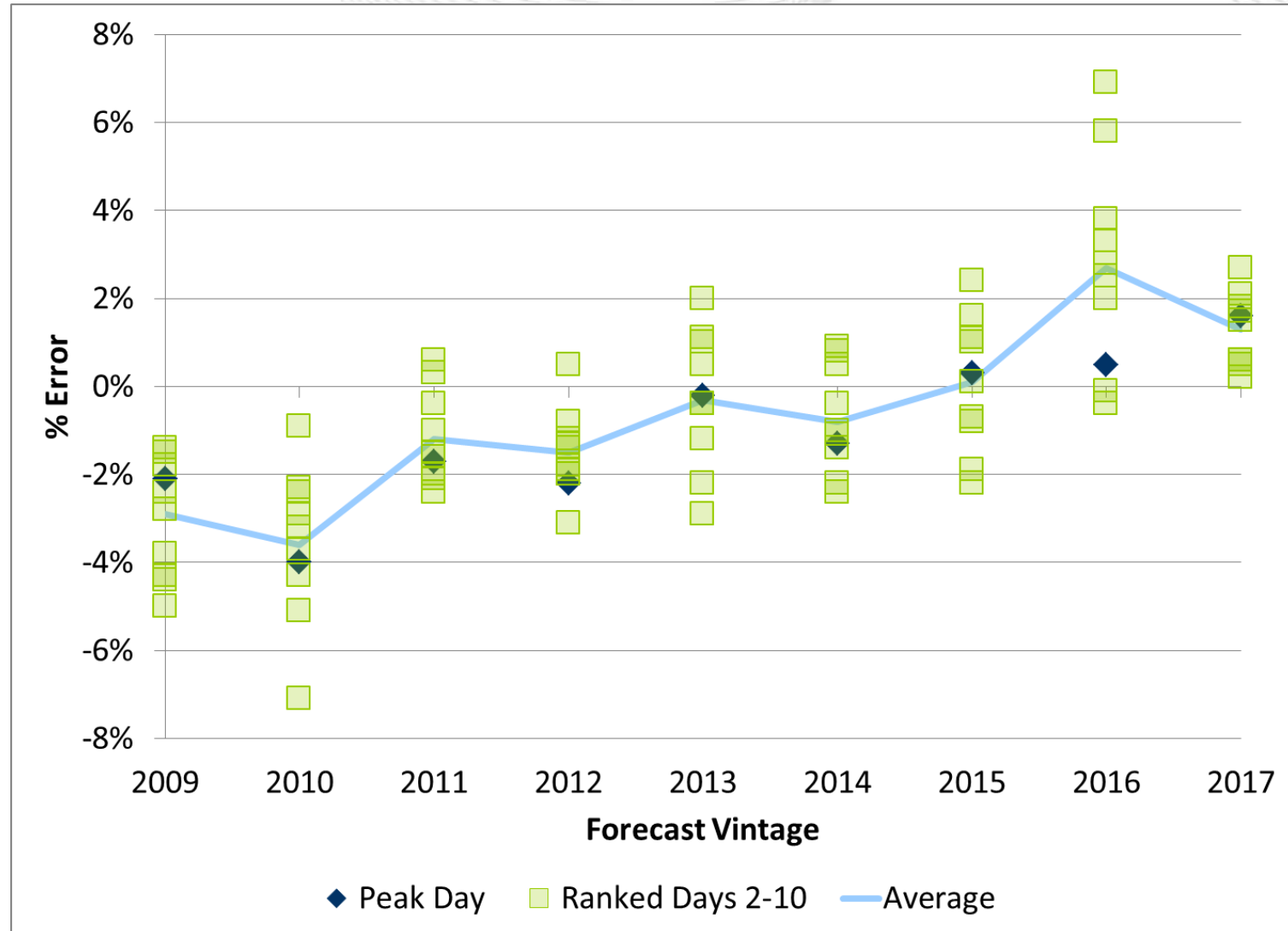
Summer Forecast Error on Top 10 Days

Forecast Horizon = 0 Years



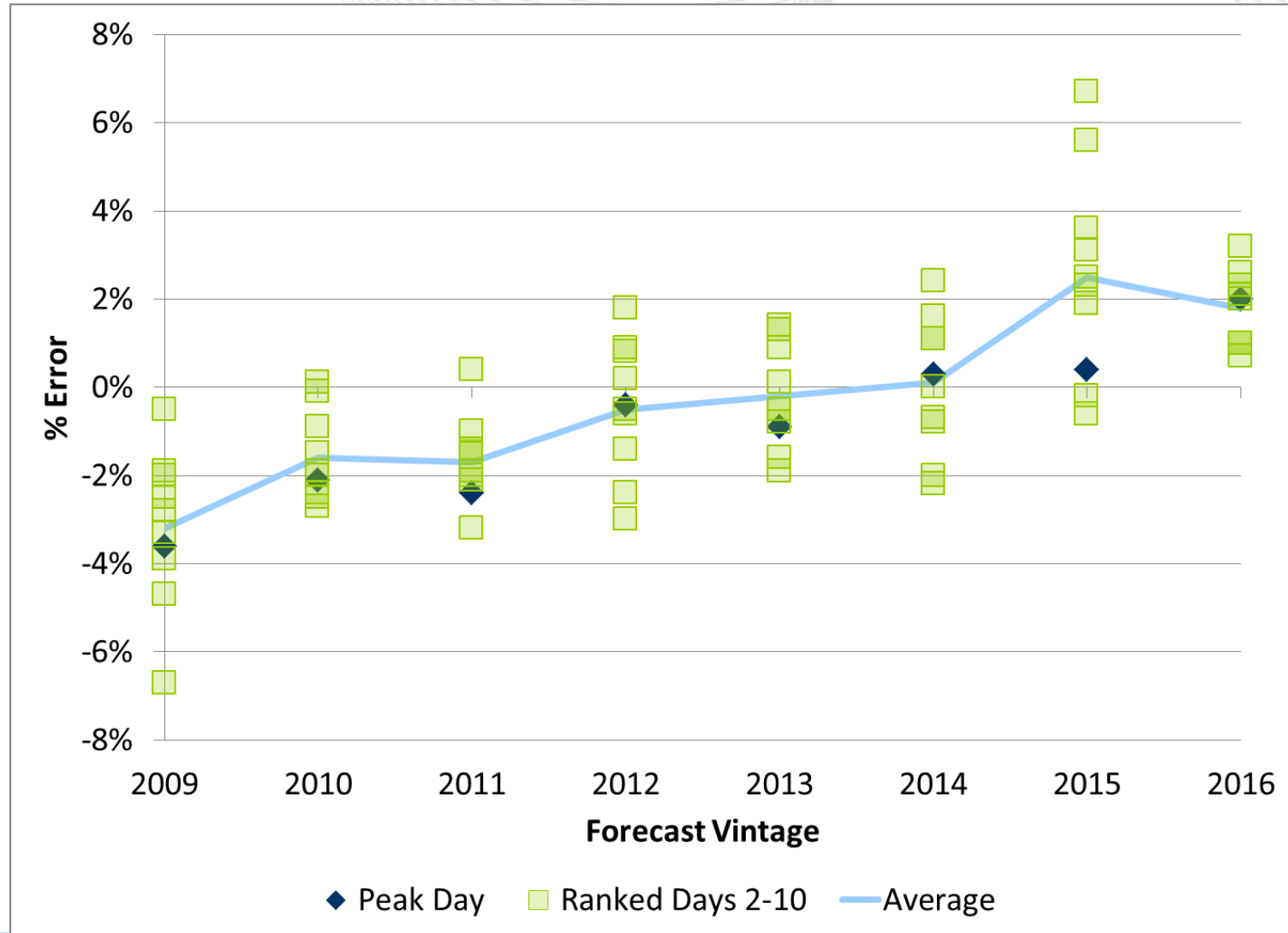
Summer Forecast Error on Top 10 Days

Forecast Horizon = 1 Year



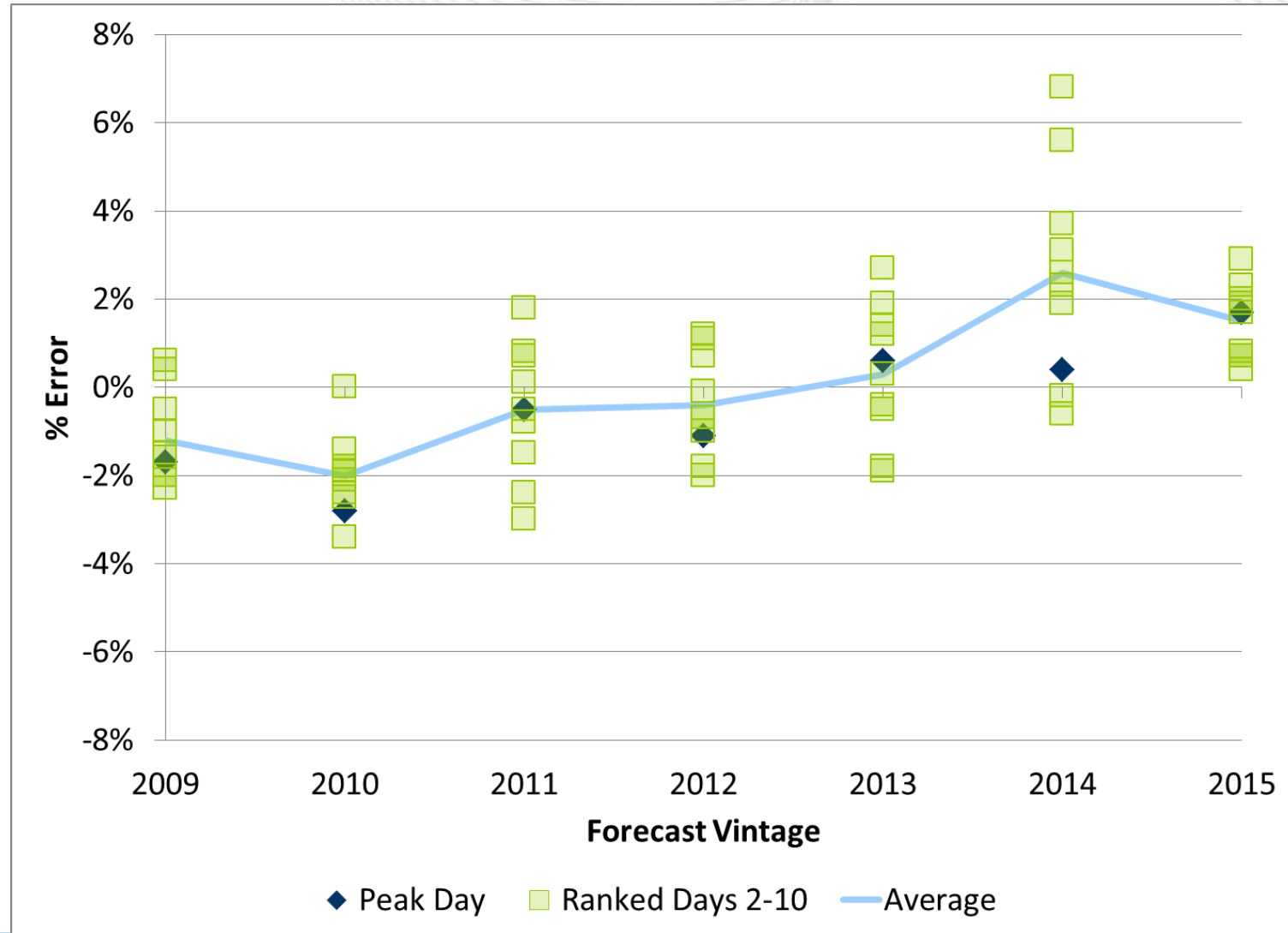
Summer Forecast Error on Top 10 Days

Forecast Horizon = 2 Years



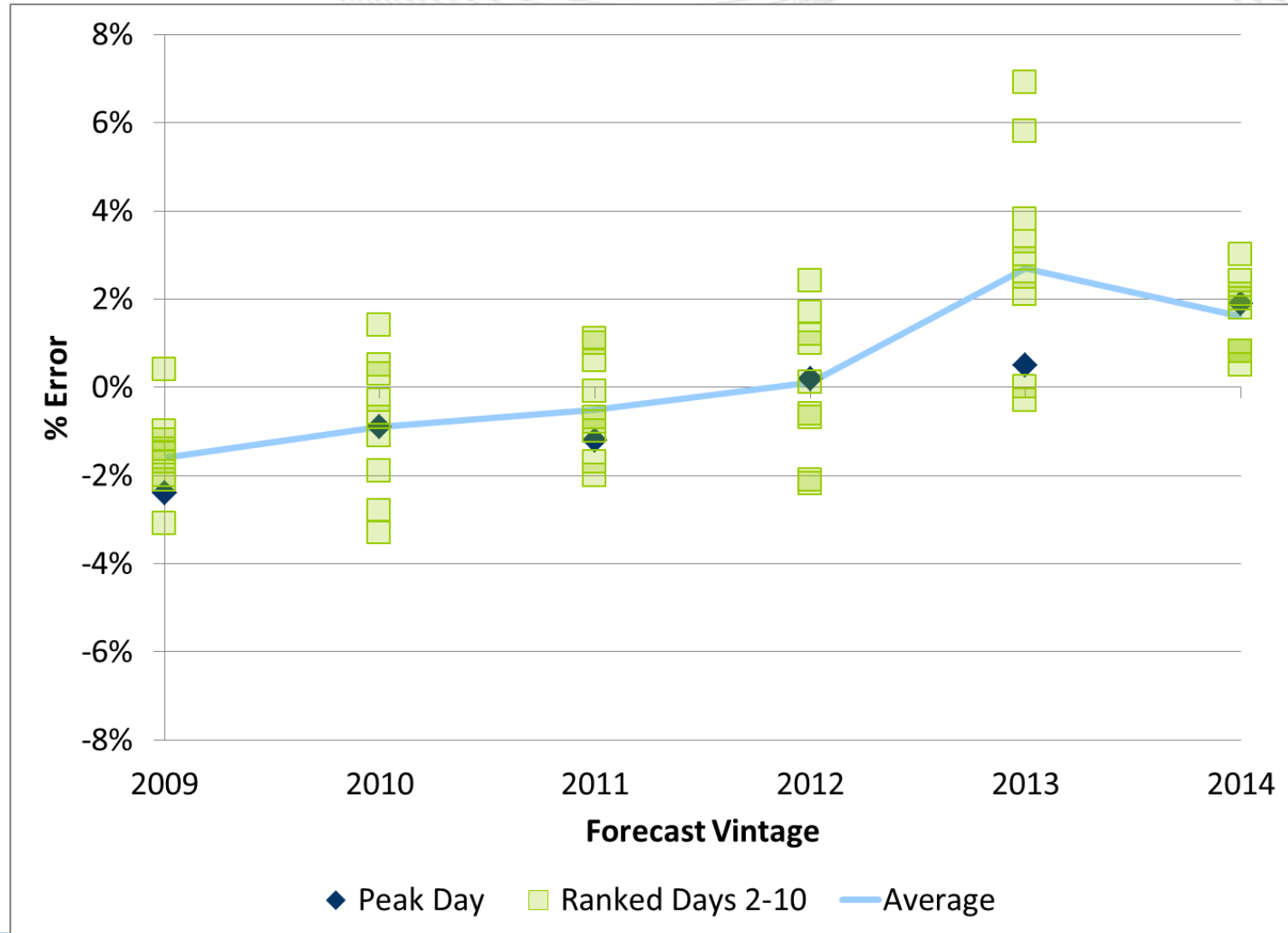
Summer Forecast Error on Top 10 Days

Forecast Horizon = 3 Years



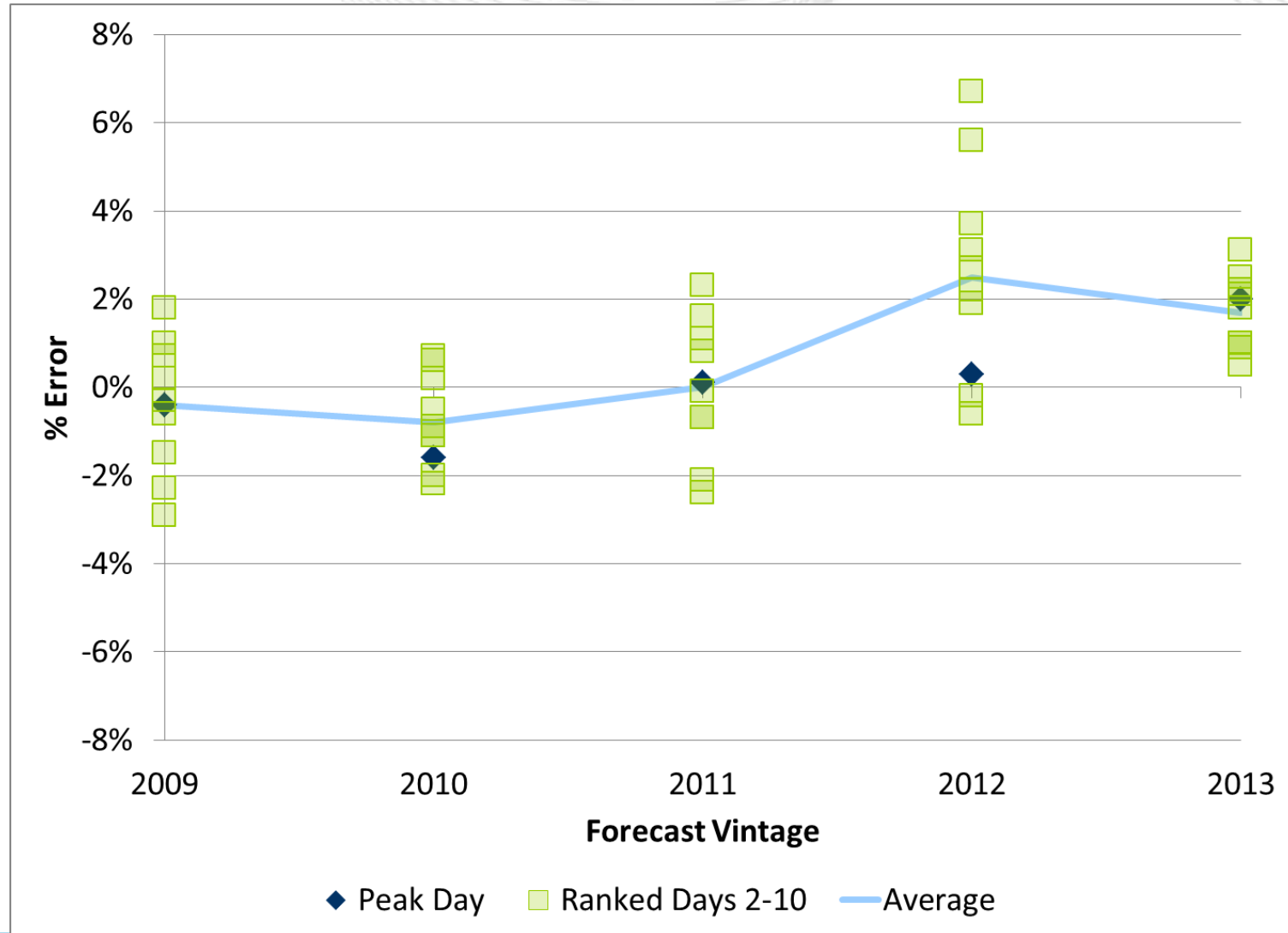
Summer Forecast Error on Top 10 Days

Forecast Horizon = 4 Years



Summer Forecast Error on Top 10 Days

Forecast Horizon = 5 Years



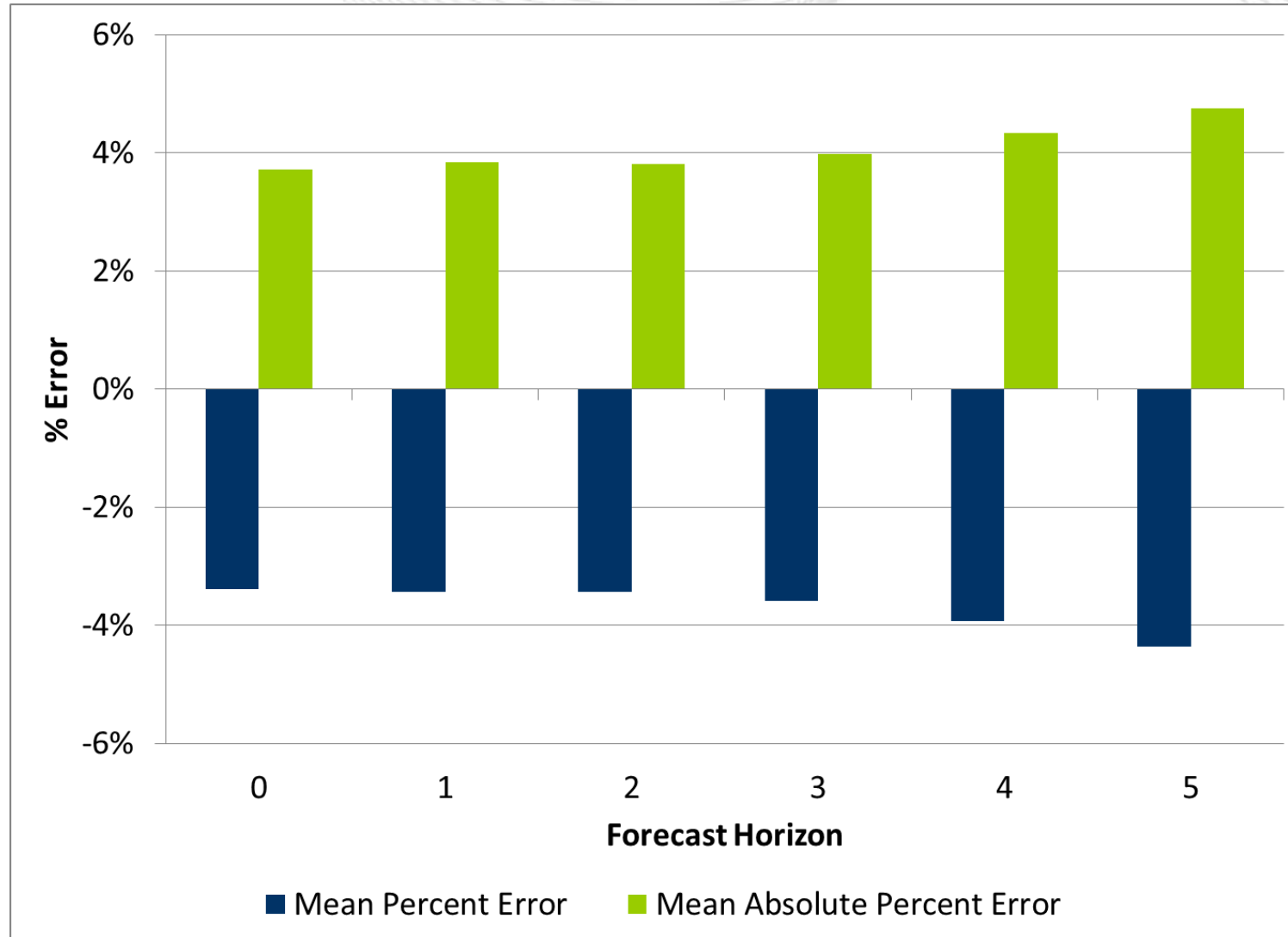


Winter Evaluation Periods

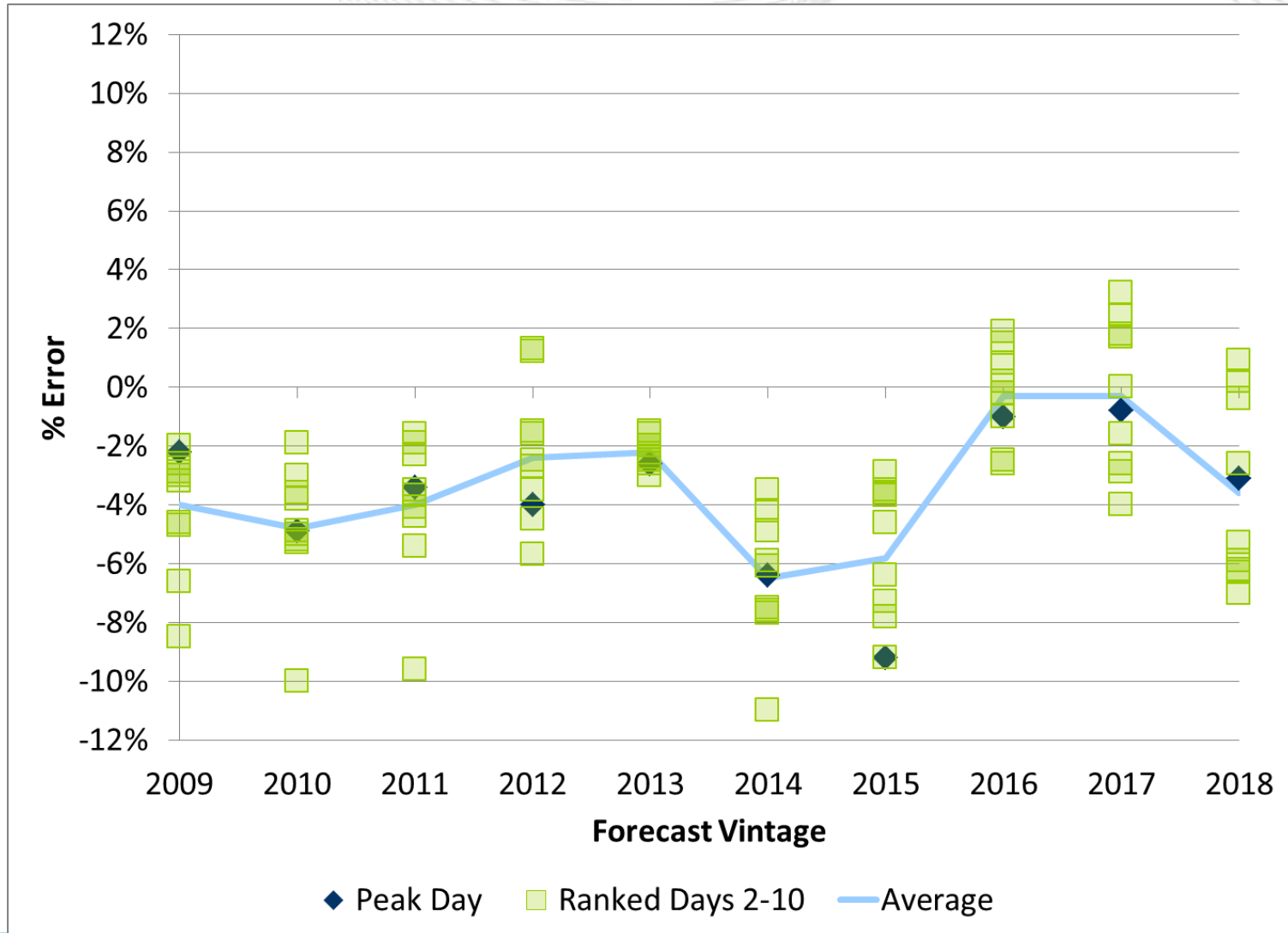
Forecast Years Out

| | Zero | One | Two | Three | Four | Five |
|----------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| 2009 Forecast | 2008/2009 | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 |
| 2010 Forecast | 2009/2010 | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 | 2014/2015 |
| 2011 Forecast | 2010/2011 | 2011/2012 | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 |
| 2012 Forecast | 2011/2012 | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 |
| 2013 Forecast | 2012/2013 | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 |
| 2014 Forecast | 2013/2014 | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | |
| 2015 Forecast | 2014/2015 | 2015/2016 | 2016/2017 | 2017/2018 | | |
| 2016 Forecast | 2015/2016 | 2016/2017 | 2017/2018 | | | |
| 2017 Forecast | 2016/2017 | 2017/2018 | | | | |
| 2018 Forecast | 2017/2018 | | | | | |

Winter Forecast Error on Top 10 Days Summary

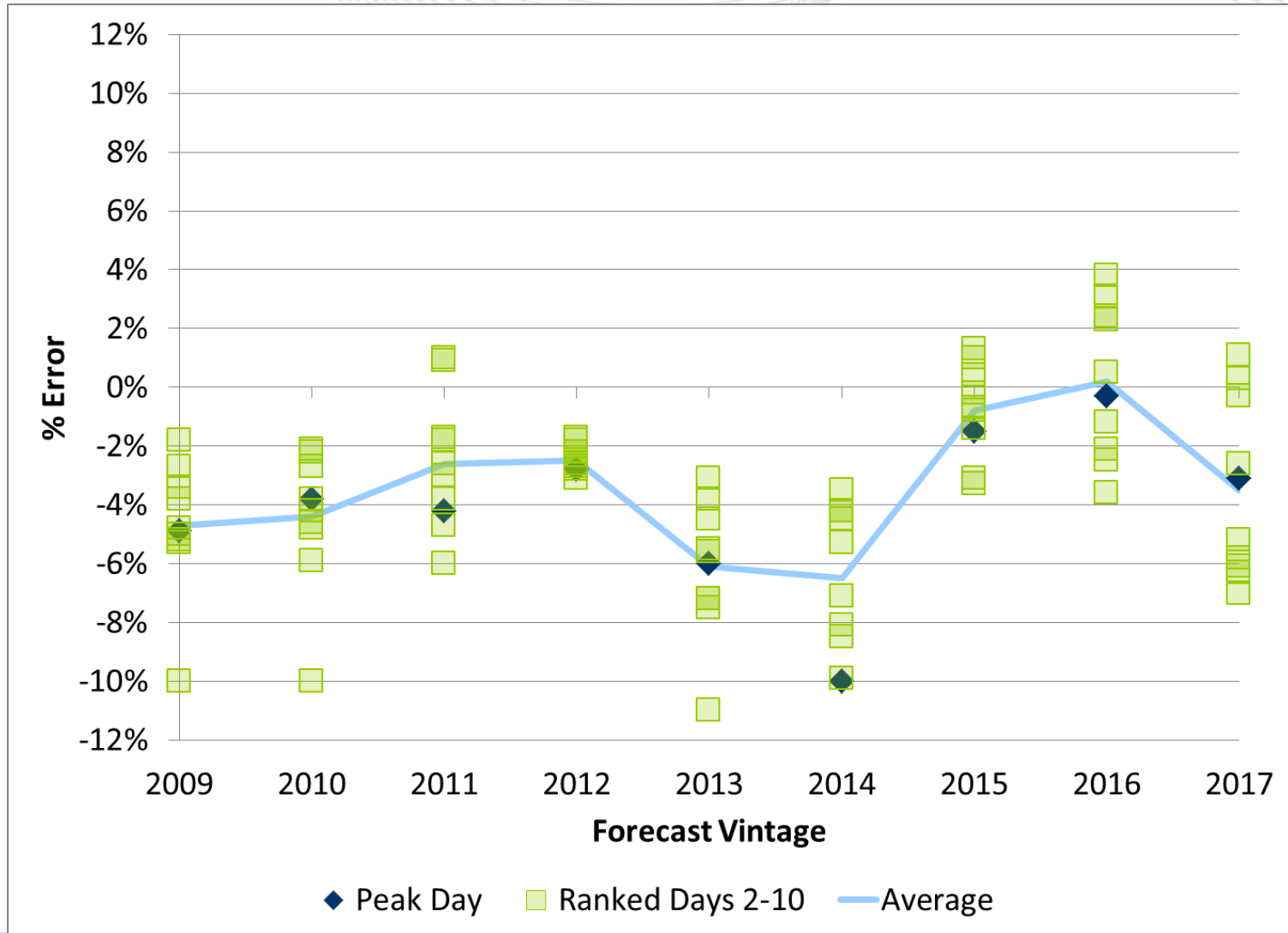


Winter Forecast Error on Top 10 Days Forecast Horizon = 0 Years

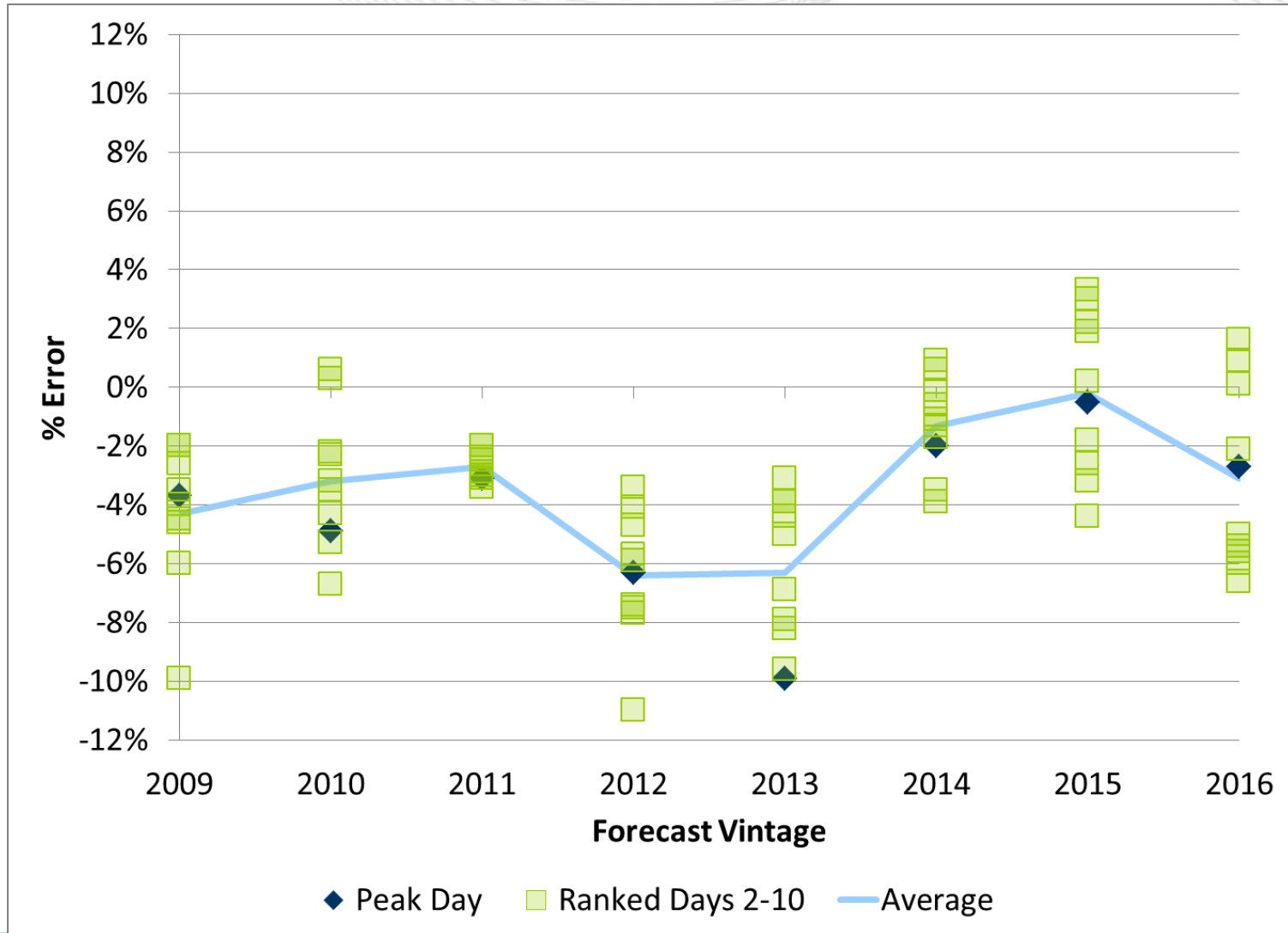


Winter Forecast Error on Top 10 Days

Forecast Horizon = 1 Year

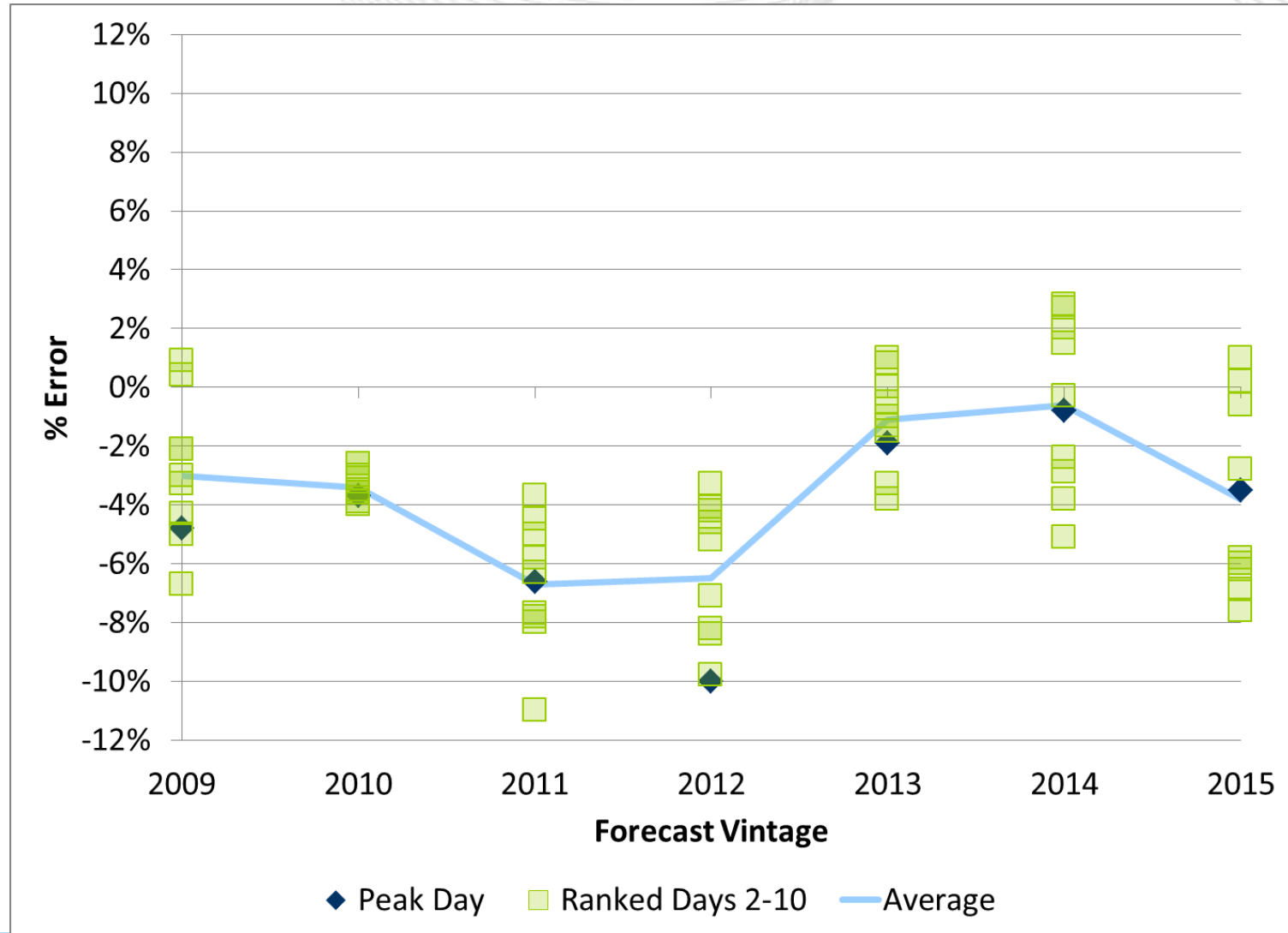


Winter Forecast Error on Top 10 Days Forecast Horizon = 2 Years



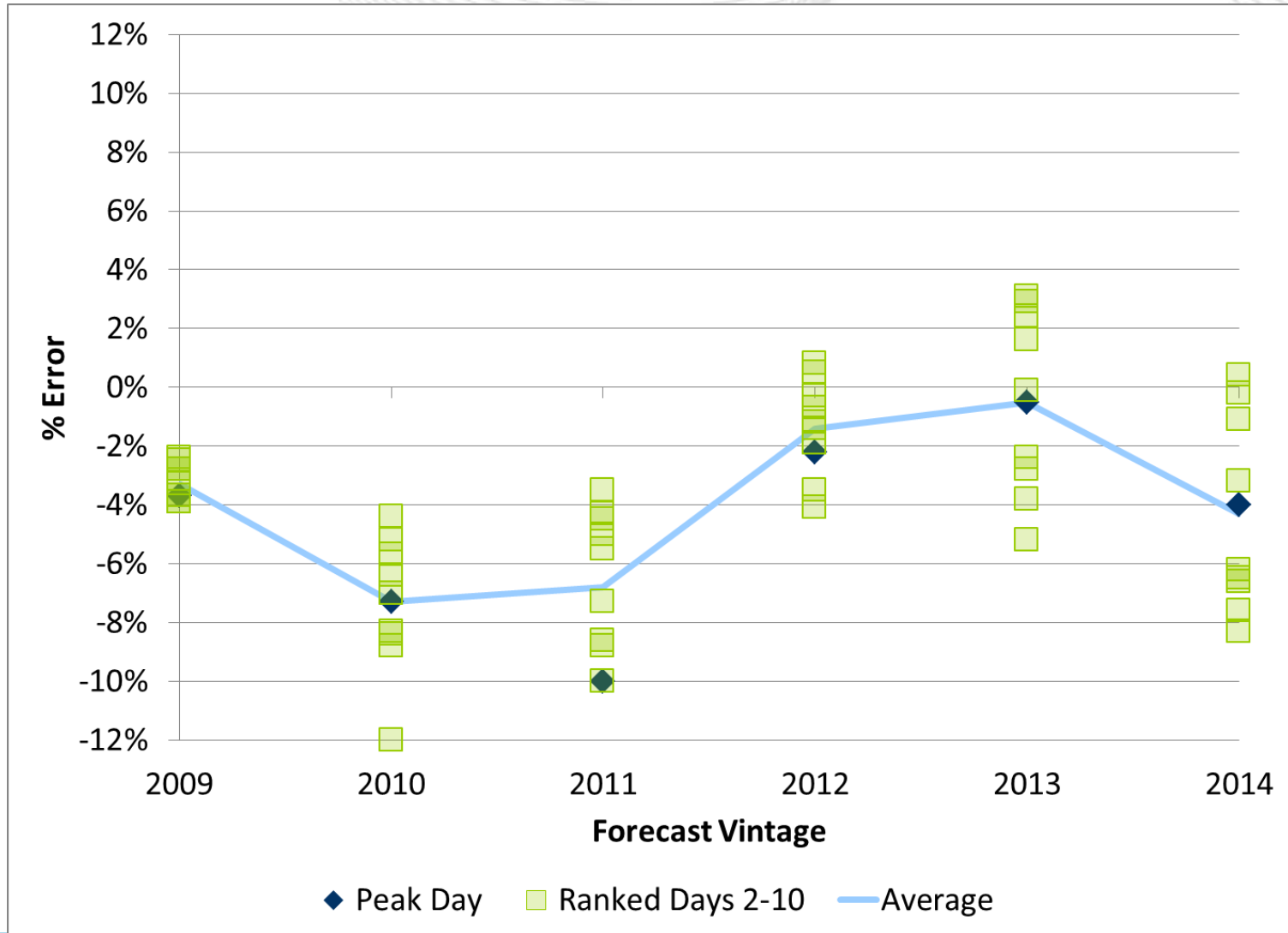
Winter Forecast Error on Top 10 Days

Forecast Horizon = 3 Years



Winter Forecast Error on Top 10 Days

Forecast Horizon = 4 Years



Winter Forecast Error on Top 10 Days

Forecast Horizon = 5 Years

