

As of end of year 2016

SubSectors Groups - Results graphs for 5 certified ZZAlpha® recommendations daily for past 5 years

The ZZAlpha® machine learning algorithm created recommendations for Long that obtained significantly better results than those for Anti-long. Inspection of the seven graphs below shows that in 1 (AllTech) the Long recommendations beat the Anti-Long recommendations in all 5 years. In 1 (SemiConductors), the Long recommendations beat the Anti-Long recommendations in 4 of the 5 years. In 4 (Insurance, Investment Services, RealEstate Ops, and O&G Ops), the Long recommendations beat the Anti-Long recommendations in 3 of the 5 years.

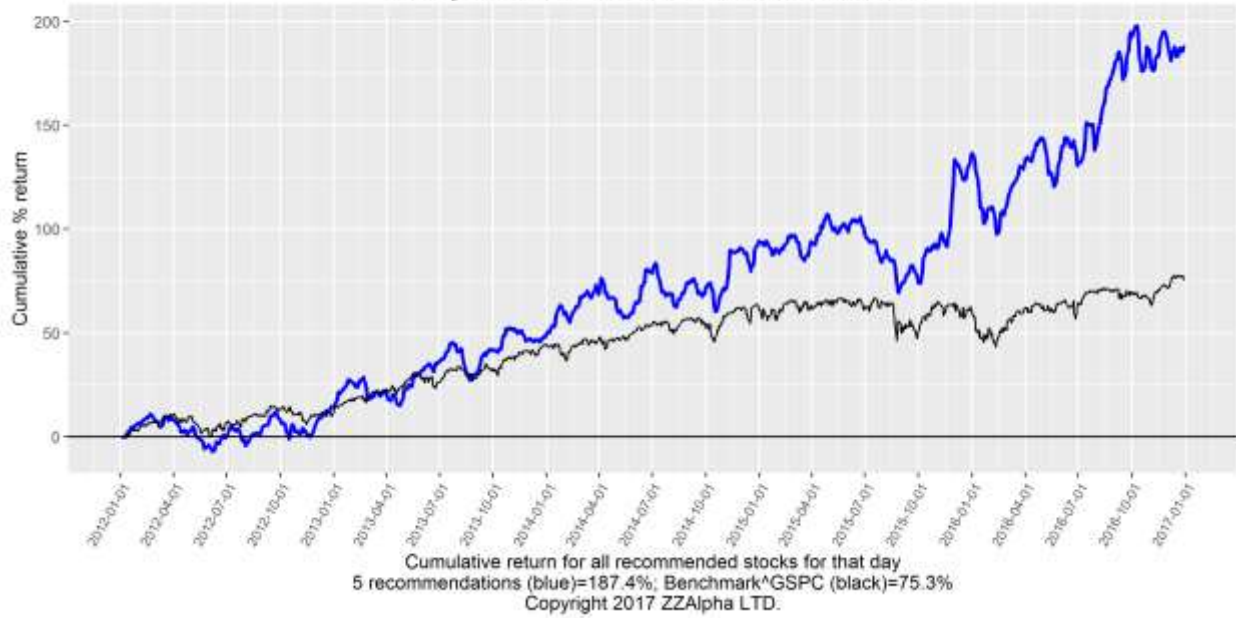
3 of the groups substantially beat their benchmarks over 5 years. 2 of the groups underperformed the benchmark.

We picked the benchmarks when production began in 2010; more appropriate benchmarks are available today for some of the groups (e.g. Real Estate Operations), but we do not change benchmarks once they are selected unless a benchmark terminates.

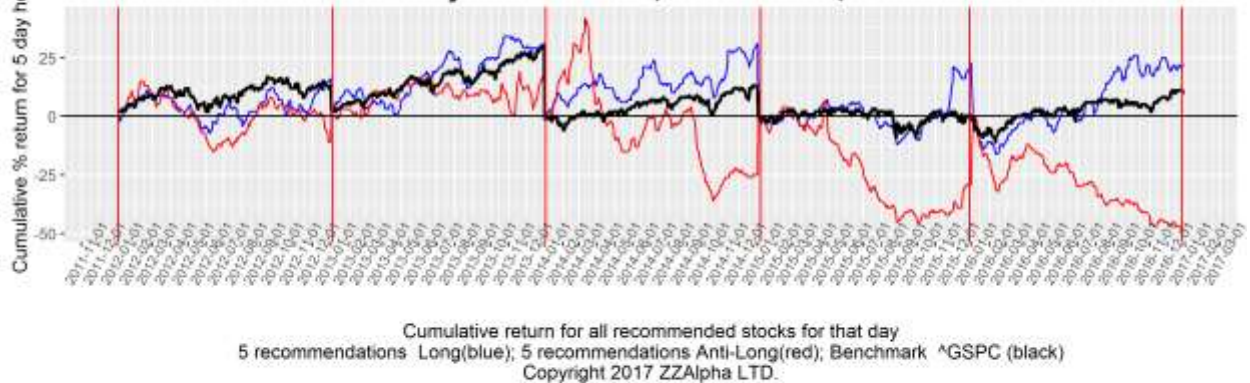
All results are net of \$8 per trade commission costs and assume a \$1m starting asset under management. The benchmarks have no commission costs.

We use "Anti-Long" instead of short because short implies the availability of short shares to borrow, which shares may not be fully available to any or some investors. "Anti-Long" shows the effect of buying shares that are recommended to **decline** in price, and permits comparison of the effectiveness of the machine learning technique in separating stocks likely to rise in price from stocks likely to decline in price over the 5 day hold period.

**Cumulative Returns for SICs-AllTech Recommendations and Benchmark ^GSPC**  
**5 recommendations Long Hold 5days**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



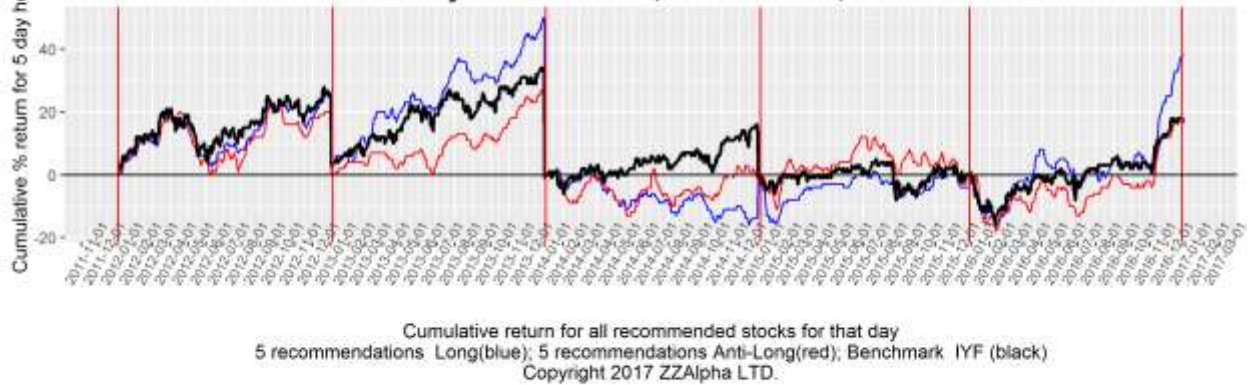
**Cumulative Returns for SICs-AllTech Recommendations and Benchmark ^GSPC**  
**5 recommendations Long and Anti-Long Hold 5 day**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



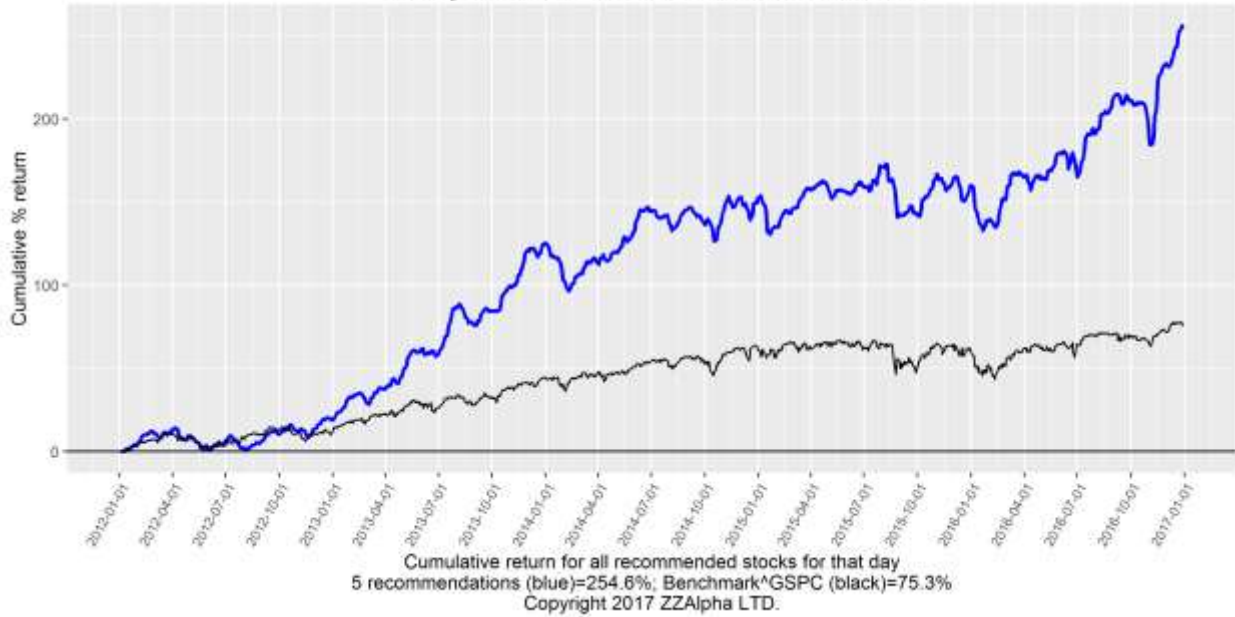
**Cumulative Returns for SICs-Banks Recommendations and Benchmark IYF**  
**5 recommendations Long Hold 5days**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



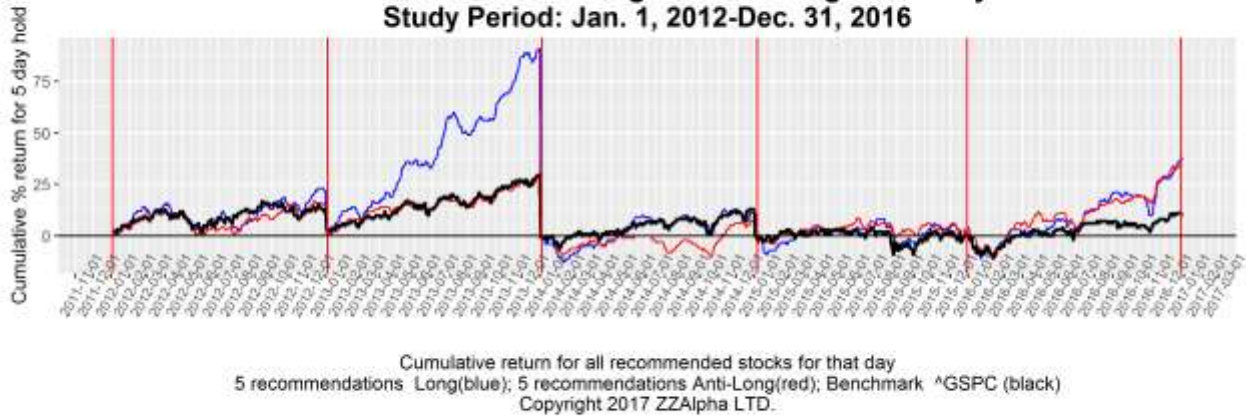
**Cumulative Returns for SICs-Banks Recommendations and Benchmark IYF**  
**5 recommendations Long and Anti-Long Hold 5 day**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



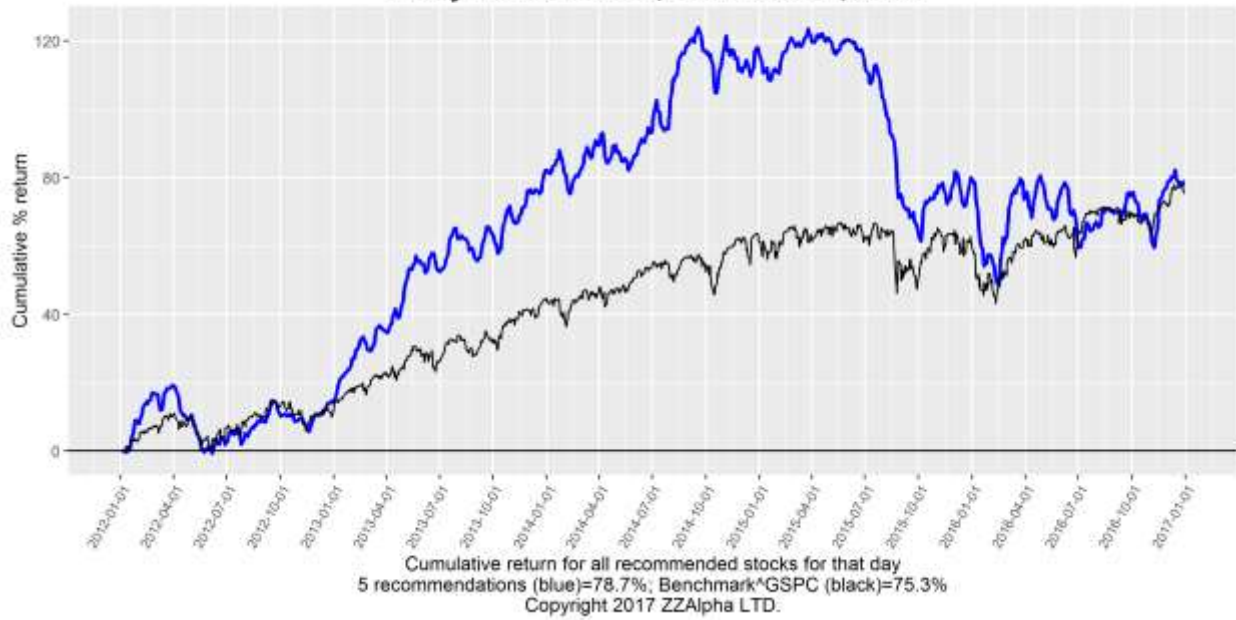
**Cumulative Returns for SICs-Insurance Recommendations and Benchmark ^GSPC  
5 recommendations Long Hold 5days  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



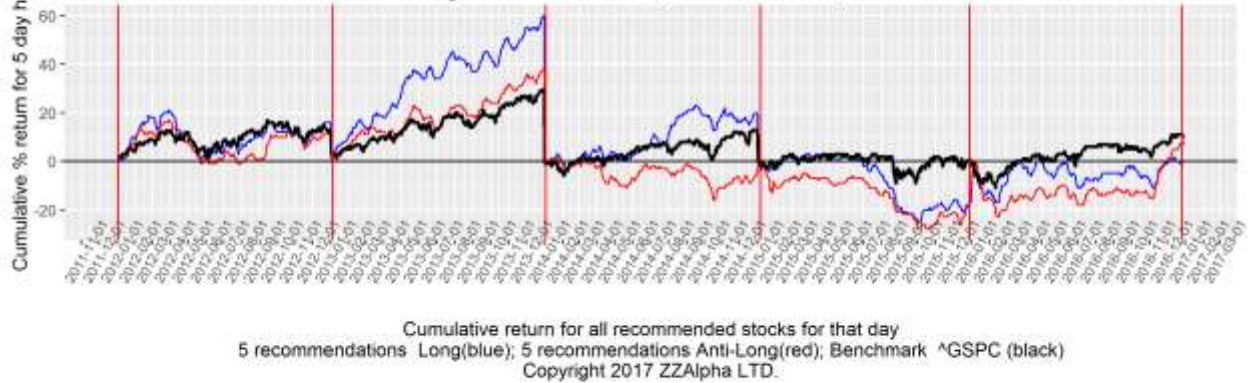
**Cumulative Returns for SICs-Insurance Recommendations and Benchmark ^GSPC  
5 recommendations Long and Anti-Long Hold 5 day  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



**Cumulative Returns for SICs-InvServ Recommendations and Benchmark ^GSPC**  
**5 recommendations Long Hold 5days**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



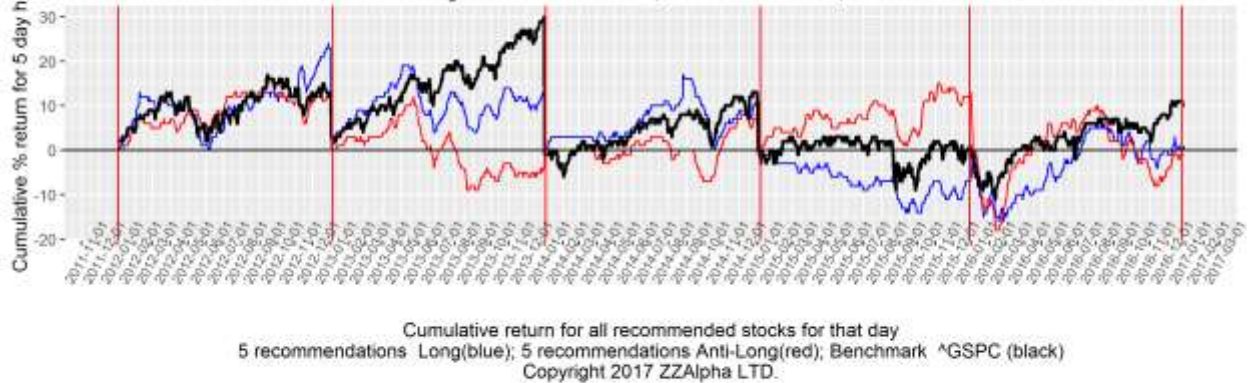
**Cumulative Returns for SICs-InvServ Recommendations and Benchmark ^GSPC**  
**5 recommendations Long and Anti-Long Hold 5 day**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



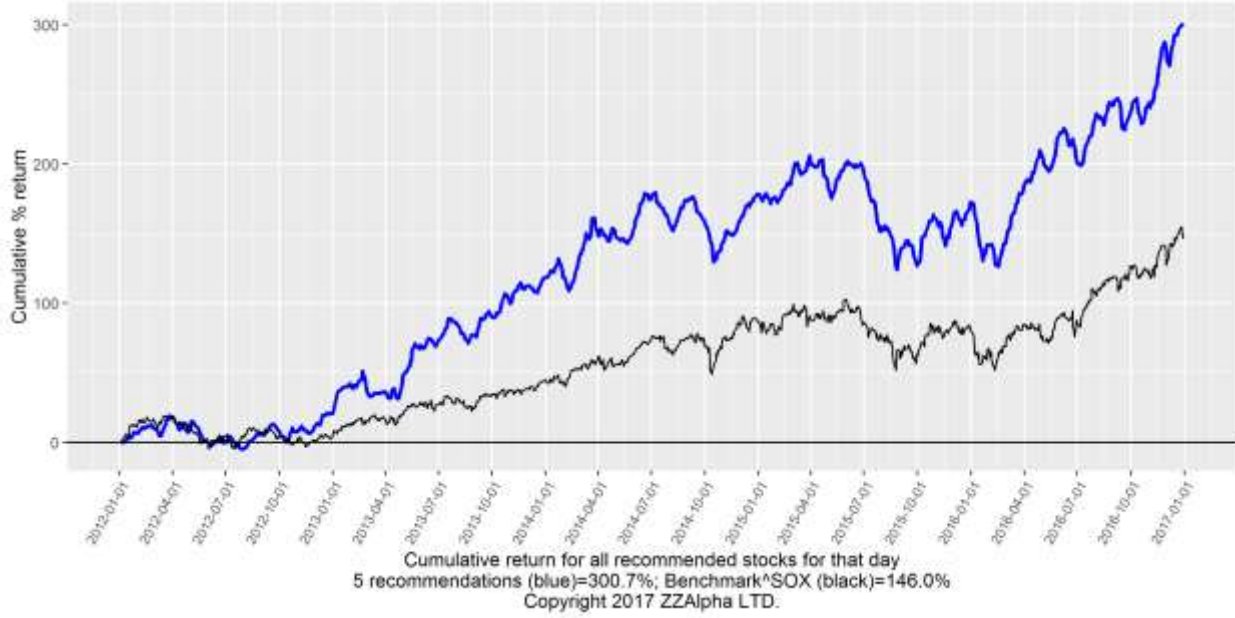
**Cumulative Returns for SIC-6798-REOps Recommendations and Benchmark ^GSPC  
5 recommendations Long Hold 5days  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



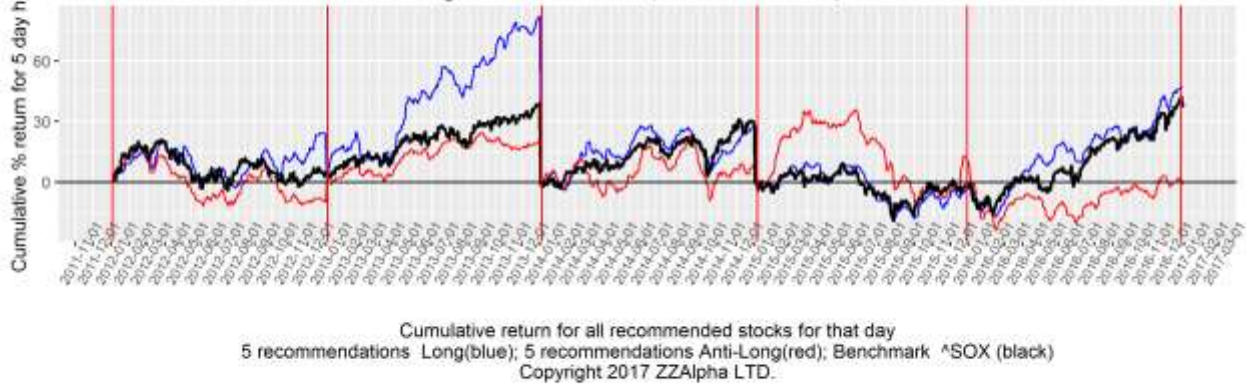
**Cumulative Returns for SIC-6798-REOps Recommendations and Benchmark ^GSPC  
5 recommendations Long and Anti-Long Hold 5 day  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



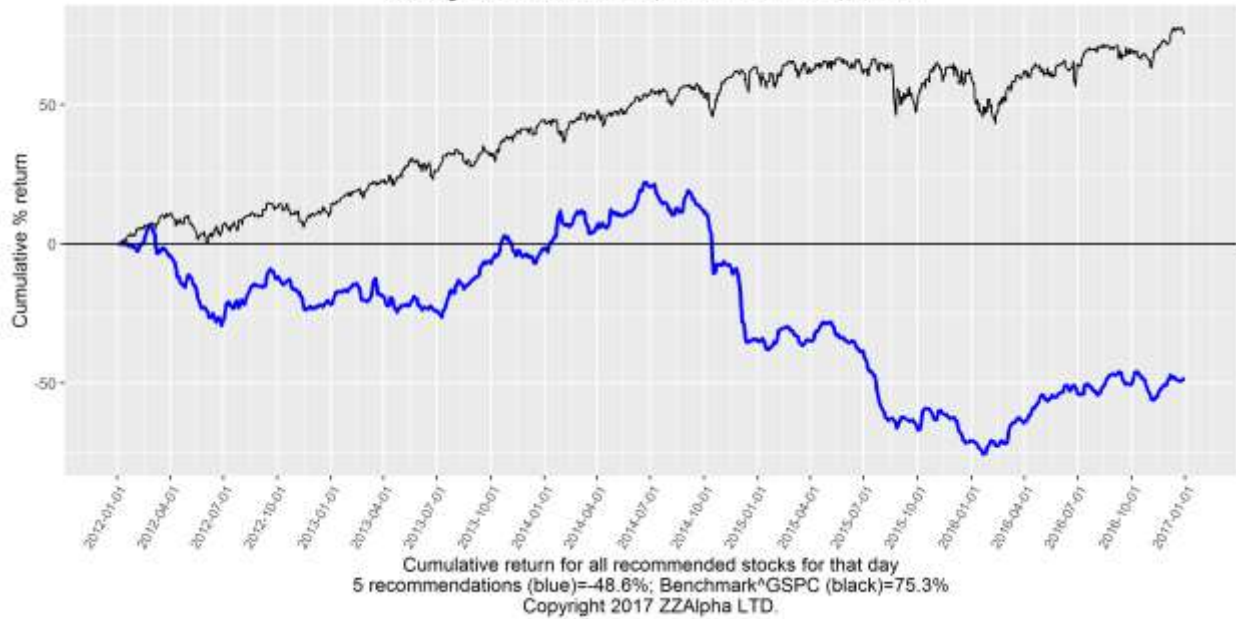
**Cumulative Returns for SIC-3674-SemiCond Recommendations and Benchmark ^SOX  
5 recommendations Long Hold 5days  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



**Cumulative Returns for SIC-3674-SemiCond Recommendations and Benchmark ^SOX  
5 recommendations Long and Anti-Long Hold 5 day  
Study Period: Jan. 1, 2012-Dec. 31, 2016**



**Cumulative Returns for SIC-1311-OGOps Recommendations and Benchmark ^GSPC**  
**5 recommendations Long Hold 5days**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**



**Cumulative Returns for SIC-1311-OGOps Recommendations and Benchmark ^GSPC**  
**5 recommendations Long and Anti-Long Hold 5 day**  
**Study Period: Jan. 1, 2012-Dec. 31, 2016**

