Using Historical Probabilities to Trade the Opening Gap

Scott Andrews
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Disclaimer

This material is intended for educational purposes only and is believed to be accurate, but its accuracy is not guaranteed. Trading and investing has large potential rewards and large potential risks. You must be aware of, and fully understand, these risks and be willing to accept them in order to invest in equity, futures, options, currencies and other financial markets. Do not trade with money that you cannot afford to lose. This material is neither a solicitation nor an offer to buy or sell equities, futures, options, or currencies. No representation is being made that any account will or is likely to achieve profits or losses similar to those discussed. The past performance of any trading system or methodology is not necessarily indicative of future results.

Use this information at your own risk!!
Agenda

• Your Trading Style
• The Basics
• How I Trade Gaps
• Gap Zones
• Entries, Targets, & Stops
• For More Info...
# Trading Style:
Discretionary vs. Probability-Based

<table>
<thead>
<tr>
<th>Decision Process</th>
<th>Description</th>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
</table>
| Probability-Based| Selection, entry, targets and stops are guided by historical probabilities.  | •Minimizes emotion  
•Augments lack of experience                   | •Can be difficult to interpret conflicting data  
•Access to reliable data/research                   |
| Discretionary    | Decisions are based upon interpretation of indicators and price action.     | •Basic can be learned and applied quickly  
•Appeals to independent nature of many               | •Can take many years to achieve consistent profitability  
•Difficult to discern excellence from random results |
What is a Gap?

The most common definition is the difference between a security's opening price and its prior day/session closing price.

This difference shows up visually on a price chart as an open space or “gap.”
What Does a Gap Look Like?
Example of Gap: 5 Min Chart

Next day opening price (9:30 am ET)

Price retraces & fills gap

Prior day closing price (4:15 pm ET)
More examples of gaps…

*(see charts)*
Fade the Gap
“The Easiest Trade of The Day”

- Gap fades have an inherent bias & edge. (70% fill by end of day)*
- Can prepare in minutes before opening bell.
- Pre-defined entry, target and stop – no need to time the entry or exit
- Risks are limited and controlled - no overnight risk.
- They work in bull and bear markets – no need to predict the market’s next move (market neutral).

(* based upon hypothetically fading opening gaps ≥ 1 point in the E-Mini S&P 500 futures, 1998-2009, targeting prior close, exiting end of day if gap did not fill. This not a recommended strategy. )

Index futures (S&P, Dow, Russell, Nasdaq) are ideal gap trading markets due to liquidity, reversion bias, & ease.
Key Terms

- **Fade**: to trade in the **opposite** direction of the gap
- **Gap Fill**: when price retraces from the open (9:30 am ET) to the **prior day's closing price** (4:15 pm ET)
- **Win Rate (%)**: percent of opening gaps that, if faded at the open, fill the gap or end the day profitable*
- **Profit Factor** = hypothetical gross profits from winning trades*
  
  -------------------------------------------------------------
  hypothetical gross losses from losing trades*

*Unless noted otherwise, all research shown in this presentation is based upon hypothetically trading the opening gap from 1998 – 2009, including commissions, but not accounting for any potential slippage or missed fills.*
# The Paradox of Gap Fading

<table>
<thead>
<tr>
<th>Year</th>
<th>Profit Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>2009</td>
<td>1.20</td>
</tr>
<tr>
<td>2008</td>
<td>0.90</td>
</tr>
<tr>
<td>2007</td>
<td>0.71</td>
</tr>
<tr>
<td>2006</td>
<td>1.01</td>
</tr>
<tr>
<td>2005</td>
<td>1.05</td>
</tr>
<tr>
<td>2004</td>
<td>1.11</td>
</tr>
<tr>
<td>2003</td>
<td>1.30</td>
</tr>
<tr>
<td>2002</td>
<td>1.14</td>
</tr>
<tr>
<td>2001</td>
<td>1.16</td>
</tr>
<tr>
<td>2000</td>
<td>0.94</td>
</tr>
<tr>
<td>1999</td>
<td>1.14</td>
</tr>
<tr>
<td>1998</td>
<td>1.06</td>
</tr>
</tbody>
</table>

**Average:** 1.06 (yawn)

Though an extremely high win rate, the profits from the winners barely exceed the losses from the losers.
## The Stop Dilemma

<table>
<thead>
<tr>
<th>Stop As % of Gap Size</th>
<th>Win %</th>
<th>Average Win/Loss Ratio</th>
<th>Profit Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>25%</td>
<td>21.4</td>
<td>3.49</td>
<td>0.95</td>
</tr>
<tr>
<td>50%</td>
<td>36.0</td>
<td>1.80</td>
<td>1.01</td>
</tr>
<tr>
<td>75%</td>
<td>47.0</td>
<td>1.18</td>
<td>1.05</td>
</tr>
<tr>
<td>100%</td>
<td>53.7</td>
<td>0.91</td>
<td>1.06</td>
</tr>
<tr>
<td>125%</td>
<td>59.0</td>
<td>0.73</td>
<td>1.05</td>
</tr>
<tr>
<td>150%</td>
<td>61.8</td>
<td>0.64</td>
<td>1.04</td>
</tr>
<tr>
<td>175%</td>
<td>64.7</td>
<td>0.57</td>
<td>1.05</td>
</tr>
<tr>
<td>200%</td>
<td>66.1</td>
<td>0.53</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Using small stops does not improve profitability due to the reduction in win rate.
The key to making money fading opening gaps is…

SELECTION
How I Trade Gaps

1. Focus on **SELECTION**

2. Fade the open

3. Hold for gap fill or beyond (rarely scale out prior to fill)

4. Use a **LARGE** enough stop to let probabilities work (~30% of 5 day ATR)
Selecting Gaps To Trade

- Market Mood
- Pattern
- Seasonality
- Zone
“Gap Zones”

Definition:

Location of the opening price gap relative to the prior day’s key price levels: Open, High, Low & Close

“Location, location, location”… applies to gaps too!
Why Gap Zones Work

They inherently incorporate:

- Proven support & resistance
- Short term trend
- Gap size
- Trader psychology
Gap Fade Win %

All gaps $\geq$ 1 point = 72.4 %

“Win %” is based upon hypothetically fading opening gaps $\geq$ 1 point in the E-Mini S&P 500 futures, 1998-2007, using no stop, targeting prior close, exiting end of day if gap did not fill. This not a recommended strategy.

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### Gap Fade Win % By Zone

<table>
<thead>
<tr>
<th>Prior Day</th>
<th>Historical Win Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>75%</td>
</tr>
<tr>
<td></td>
<td>76%</td>
</tr>
<tr>
<td></td>
<td>63%</td>
</tr>
</tbody>
</table>

“Win %” is based upon hypothetically fading opening gaps ≥ 1 point in the E-Mini S&P 500 futures, 1998-2007, using no stop, targeting prior close, exiting end of day if gap did not fill. This not a recommended strategy.

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Direction of Prior Day Should Be Considered Too

Prior day “direction” incorporates the short term trend.
Gap Fade Win % By Gap Zone

<table>
<thead>
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<th>Win %</th>
<th>Prior Day</th>
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<th>Win %</th>
</tr>
</thead>
<tbody>
<tr>
<td>60%</td>
<td></td>
<td></td>
<td>68%</td>
</tr>
<tr>
<td>62%</td>
<td></td>
<td></td>
<td>81%</td>
</tr>
<tr>
<td>77%</td>
<td></td>
<td></td>
<td>75%</td>
</tr>
<tr>
<td>77%</td>
<td></td>
<td></td>
<td>67%</td>
</tr>
<tr>
<td>66%</td>
<td></td>
<td></td>
<td>55%</td>
</tr>
</tbody>
</table>

“Win %” is based upon hypothetically fading opening gaps > 1 point in the E-Mini S&P 500 futures, 1998-2009, targeting prior close, exiting end of day if gap did not fill. This not a recommended strategy.

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Tip: Avoid Gaps That Open Below the Low of an Up Day

AVOID!

BLUD Gaps!

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Execution

What is my profit target?
Entry Timing
Why I Enter At The Open

✓ Simplifies execution
✓ Minimizes emotion
✓ Takes advantage of “rookie” psychology (i.e. those chasing the market)
✓ Easier to back-test
✓ Focuses the effort on the system (not me)
✓ Catches the 30% that begin filling at, or soon after, the open*

(*note: assumes opening gap size > 20% of 5 day ATR, with 10% of 5 day ATR stop, ES, 1998-2007)
Target Selection
<table>
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<th>Target % of Gap Fill</th>
<th>% Win Rate</th>
<th>Avg Winning Trade</th>
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<tr>
<td>25%</td>
<td>90.9</td>
<td>$570</td>
</tr>
<tr>
<td>50%</td>
<td>84.8</td>
<td>$1,076</td>
</tr>
<tr>
<td>75%</td>
<td>78.7</td>
<td>$1,537</td>
</tr>
<tr>
<td>100%</td>
<td>74.6</td>
<td>$1,836</td>
</tr>
<tr>
<td>125%</td>
<td>70.3</td>
<td>$2,184</td>
</tr>
</tbody>
</table>

Note: Fade medium & large opening gaps (> 20% of 5 day ATR) of the E-mini S&P 500 futures, regular trading hours, target = gap fill (prior daily close), no stop, exit at end of day. Results include 1,342 trades from 1998-2008.

75% chance of $1,836 -or- 85% chance of $1,076
Which would you prefer?
### What Else Does This Slide Tell Us?

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**It Pays to Stay!**
Price often extends beyond (i.e. through) the gap fill.
Stop Placement
Stops

• 25% – 40% of a five day ATR (avg. true range) works well for most indices depending upon the volatility of the security

• 5 – 8 points in the E-mini S&P 500 has worked well historically (~ $.50 – $.80 in the SPY)

• If I increase stop size to accommodate volatility, then I always reduce position size to ensure my max loss per trade is not exceeded

• I never hold trades overnight

Stop size is more of a personal preference than profitability determinant
Summary

• Historical probabilities level the playing field between the “Pros” and the “Joes”

• Trade selection is the key

• Larger stops have many benefits

• It often “pays to stay” (hold beyond initial target)

Thank You
For More Info…

Email: HamzeiSlides@masterthegap.com to:

✓ Receive copy of the presentation slides
✓ Option to sign up for email list
✓ Option to register for next webinar - December 1:
  “How to Trade Using MasterTheGap.com”