

USING SPREADSHEETS FOR RISK ASSESSMENT AND CONTROL

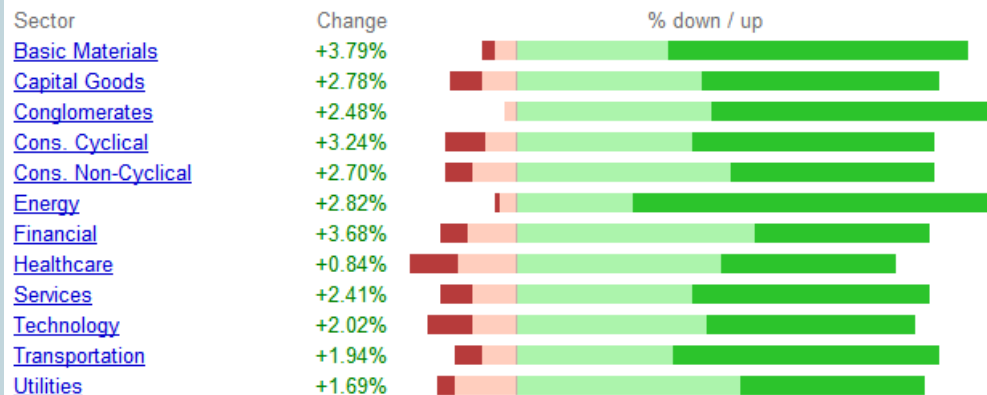
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408-918-9333**

Please Note: Individual companies shown or discussed in this presentation have been used as examples only and are not intended as recommendations of any kind by Anava Capital Management LLC or any of its representatives.

SOME INTERESTING CHARTS

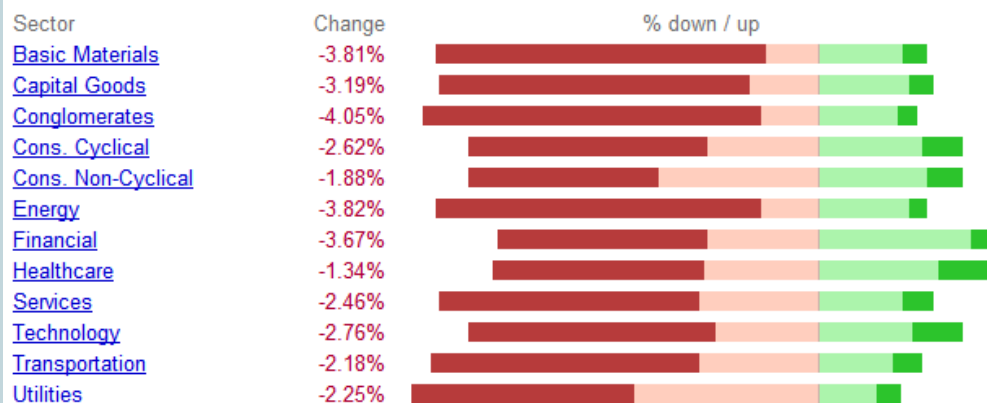
Sector summary



[Cons. Cyclical](#)
[Cons. Non-Cyclical](#)
[Energy](#)
[Financial](#)
[Healthcare](#)
[Services](#)

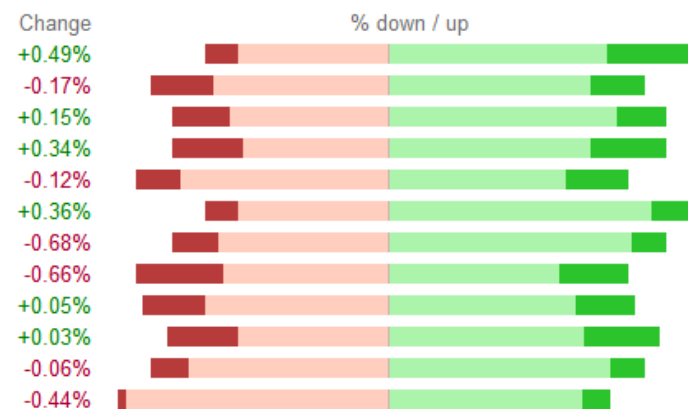
PANIC

Sector summary



GREED

RATIONALITY



These charts came from the last few weeks. Greed and panic are from two successive days! Rational was a couple of weeks earlier. (From Google Finance)



CAUSES OF RISK

- **INEVITABLE UNCERTAINTY IN PREDICTIONS OF THE FUTURE**
- **LACK OF ENOUGH INFORMATION TO PRODUCE ACCURATE PREDICTIONS**
- **INABILITY TO PROPERLY UNDERSTAND AND USE AVAILABLE INFORMATION**
- **INABILITY TO TAKE THE CORRECT ACTION EVEN IF IT IS KNOWN**
 - **PSYCHOLOGICAL FACTORS**
 - **REGULATORY FACTORS**
 - **INSUFFICIENT OR TOO MUCH CASH**
 - **OTHER PERSONAL FACTORS**

TYPES OF INFORMATION

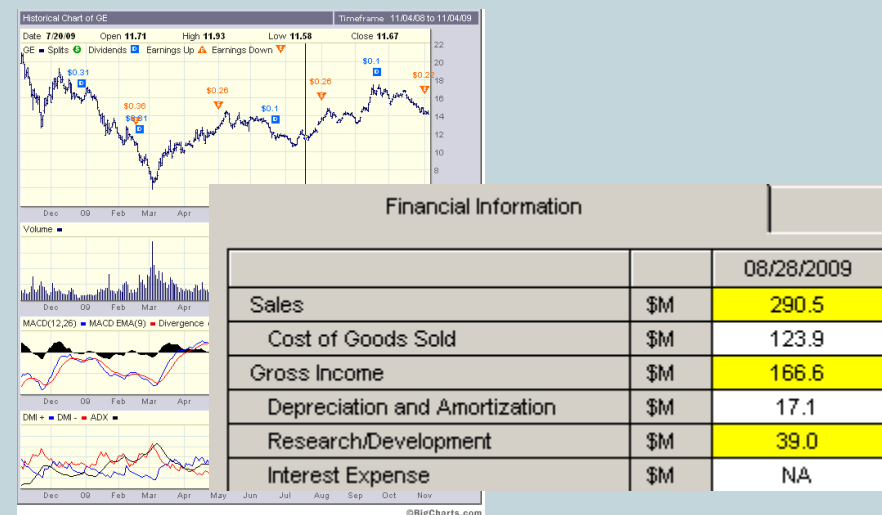
QUALITATIVE

- NEWS
- PERSONAL EXPERIENCE
- ADVICE FROM OTHERS



QUANTITATIVE

- FUNDAMENTALS
- PRICE & VOLUME DATA



WE'LL COVER BOTH, BUT STRONGLY EMPHASIZE QUANTITATIVE ANALYSIS

Figures from: www.marketwatch.com, www.bigcharts.marketwatch.com, and AAI's Stock Investor Pro



USING QUALITATIVE BUY & SELL CRITERIA FOR PROTECTION

- **BUSINESS CHANGES**
 - LOSING A CONTRACT
 - CHANGE OF MANAGEMENT
 - REGULATORY CHANGES
 - ETC
- **ECONOMIC AND POLITICAL CHANGES**
 - LAWS
 - POLITICAL GOALS
 - MONETARY SYSTEM FLUCTUATIONS
 - ETC
- **MARKET PSYCHOLOGY CHANGES**
 - IN SOME MARKETS *EVERYTHING* GOES UP OR DOWN
 - SOMETIMES MARKET MOVES CAN BE PREDICTED FAIRLY WELL, AND SOMETIMES THEY CAN'T
 - IT CAN BE PSYCHOLOGICALLY HARD TO ACT RATIONALLY, OR TO ACT AT ALL



USING QUANTITATIVE BUY & SELL CRITERIA FOR PROTECTION

- **STOP-LOSS ORDERS TO LIMIT LOSSES**
 - SELL AT OR BELOW A FIXED PRICE (FIXED STOP)
 - SELL AT OR BELOW A PERCENTAGE BELOW THE MOST RECENT HIGH (TRAILING STOP)
- **LIMIT ORDERS TO BUY LOW OR SELL HIGH**
 - BUY AT OR BELOW OR SELL AT OR ABOVE
- **YOU CAN MAKE THE TRADES**
 - TAKES TIME
- **YOUR BROKER CAN MAKE THE TRADES**
 - YOU LOSE CONTROL (CAN BE GOOD OR BAD)
- **OPTIONS**
 - USED FOR PROTECTION, THESE ARE EQUIVALENT TO BUYING INSURANCE
 - DON'T OVERPAY



FINDING THE BEST STRATEGY

- **ANALYSIS OF PAST HISTORY**
 - It's no guarantee of success, but it's the only thing we have on which to base a prediction.
 - Quantitative analysis using spreadsheets is an easy and effective way to find a reasonable strategy.
 - Quantitative methods should be supplemented with a qualitative answer to the question "Is it reasonable to believe that what worked in the past will work now?"
- **BACK TESTING**
 - Should be done in periods similar to the present
 - Should be done in periods similar to what might appear in the near future
 - Recent data is usually more important than old data

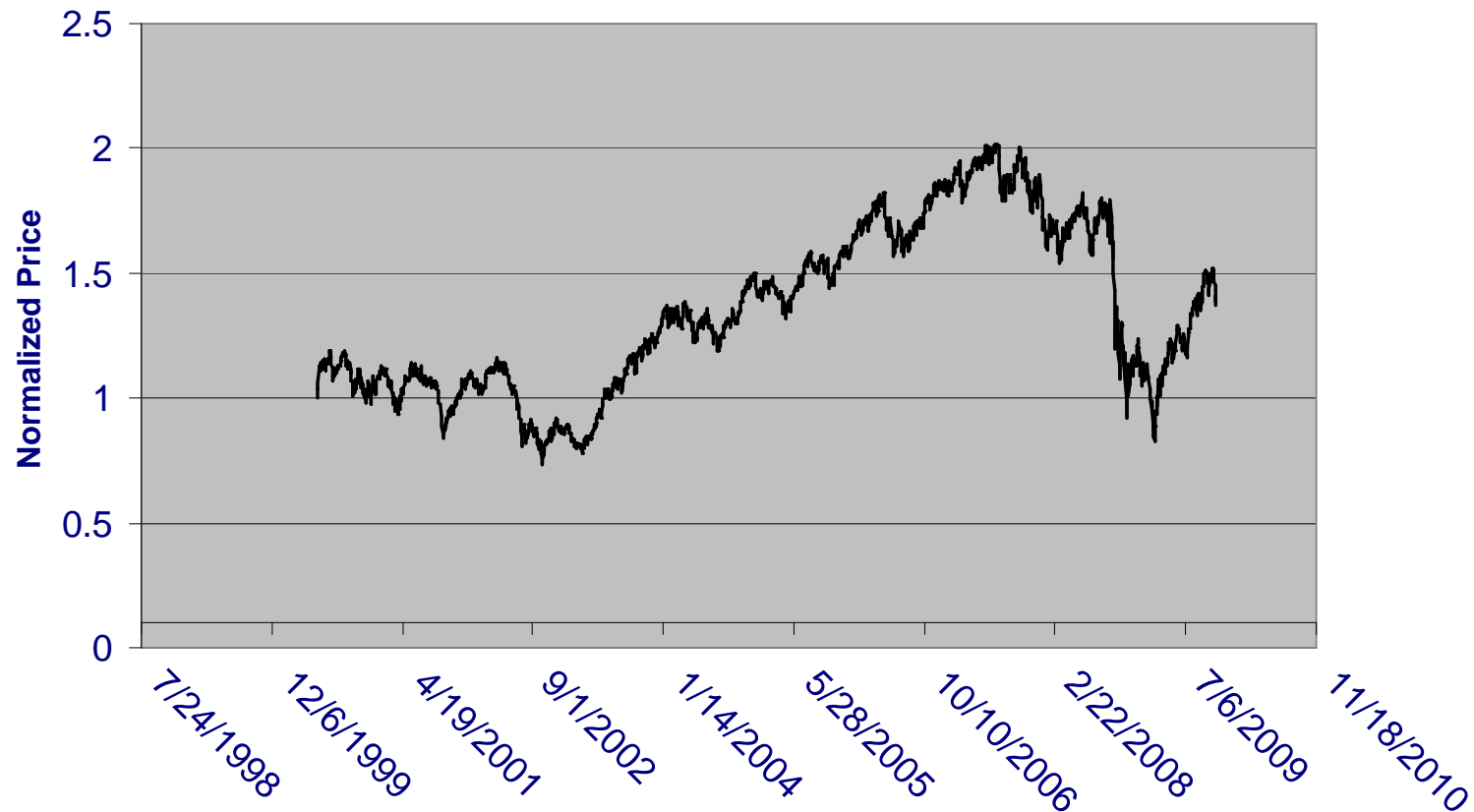


GENERAL PRINCIPLES

- **USE A TWO LEVEL SYSTEM TO BUY AND SELL**
 - **Level 1:** An alert based on price movements that warns you that something has happened that is out of the ordinary. You should investigate and buy or sell based on qualitative reasons.
 - **Level 2:** A buy or sell signal based on price movements that should be acted on first and analyzed later.
- **BACKTESTING**
 - **Never just optimize returns and accept the results**
 - **Look at optimized returns in various kinds of markets**
 - **Look at how sensitive returns are to the precise values of the optimized parameters (e.g. - the trailing stop percentage)**

A REAL EXAMPLE

iShares Russell 2000 Index Fund (IWM) Since Inception



Up 37% in 9.4 Years as of 10/30/09, or 3.4% per year. A 10-year T-Bond paid 6.33%/yr or 60% total, no reinvesting. Can we do better?



IWM – DOWNSIDE PROTECTION

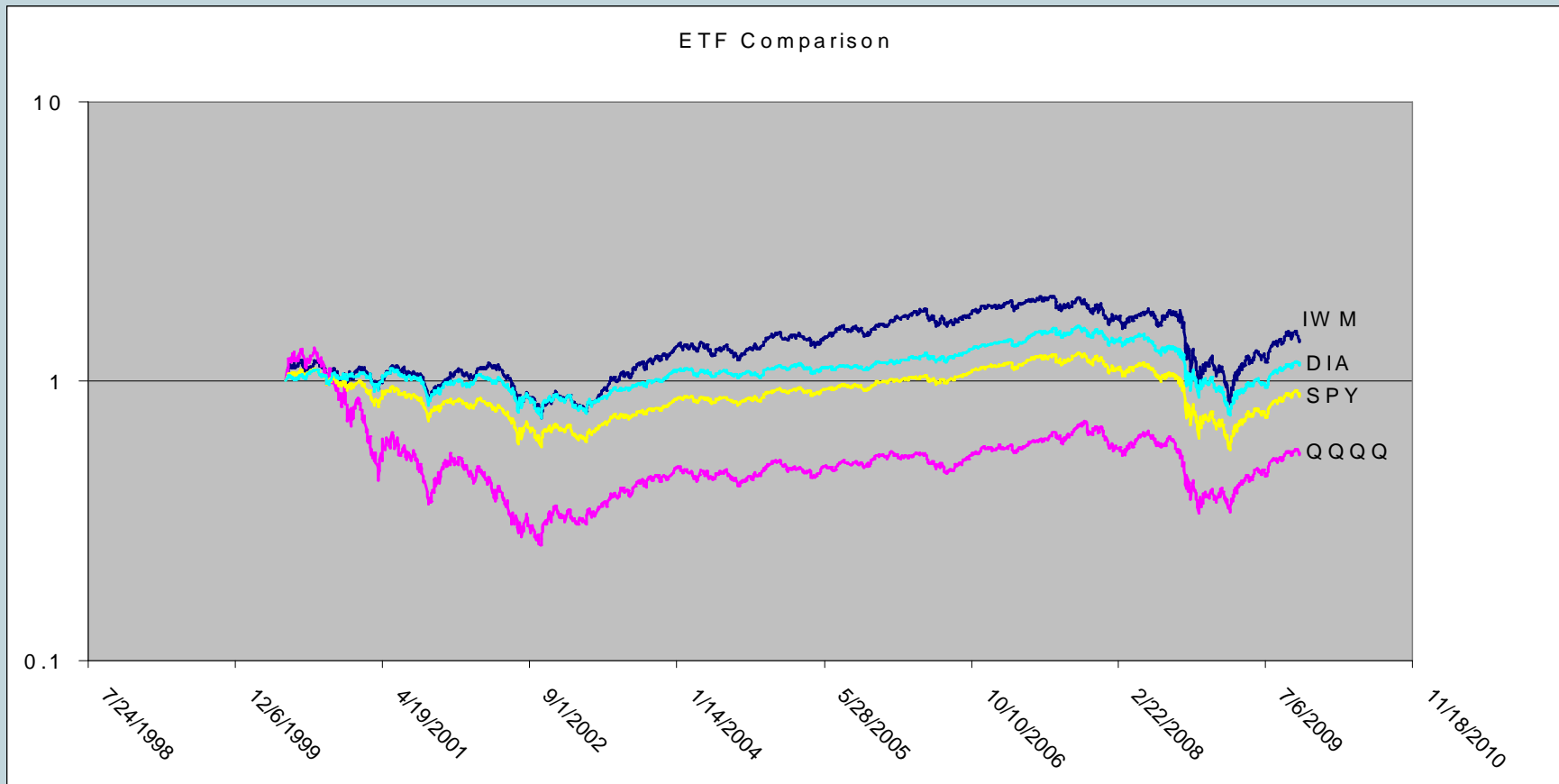
IShares Wilshire 2000 ETF – A small-cap ETF that represents the 2000 smallest capitalization stocks in the Russell 3000 index.

Steps:

- **Do a historical analysis to determine which past fluctuations are the result of normal, random variations from the general trend**
- **Check past returns and volatility of IWM shares over time periods that cover recent up, down and sideways markets.**
- **Decide how much time you have to monitor your investment. Set your monitoring interval accordingly. Use a trailing stop. If you have time use an alert too.**
- **Set alert and stop to trigger only on significant down-turns**



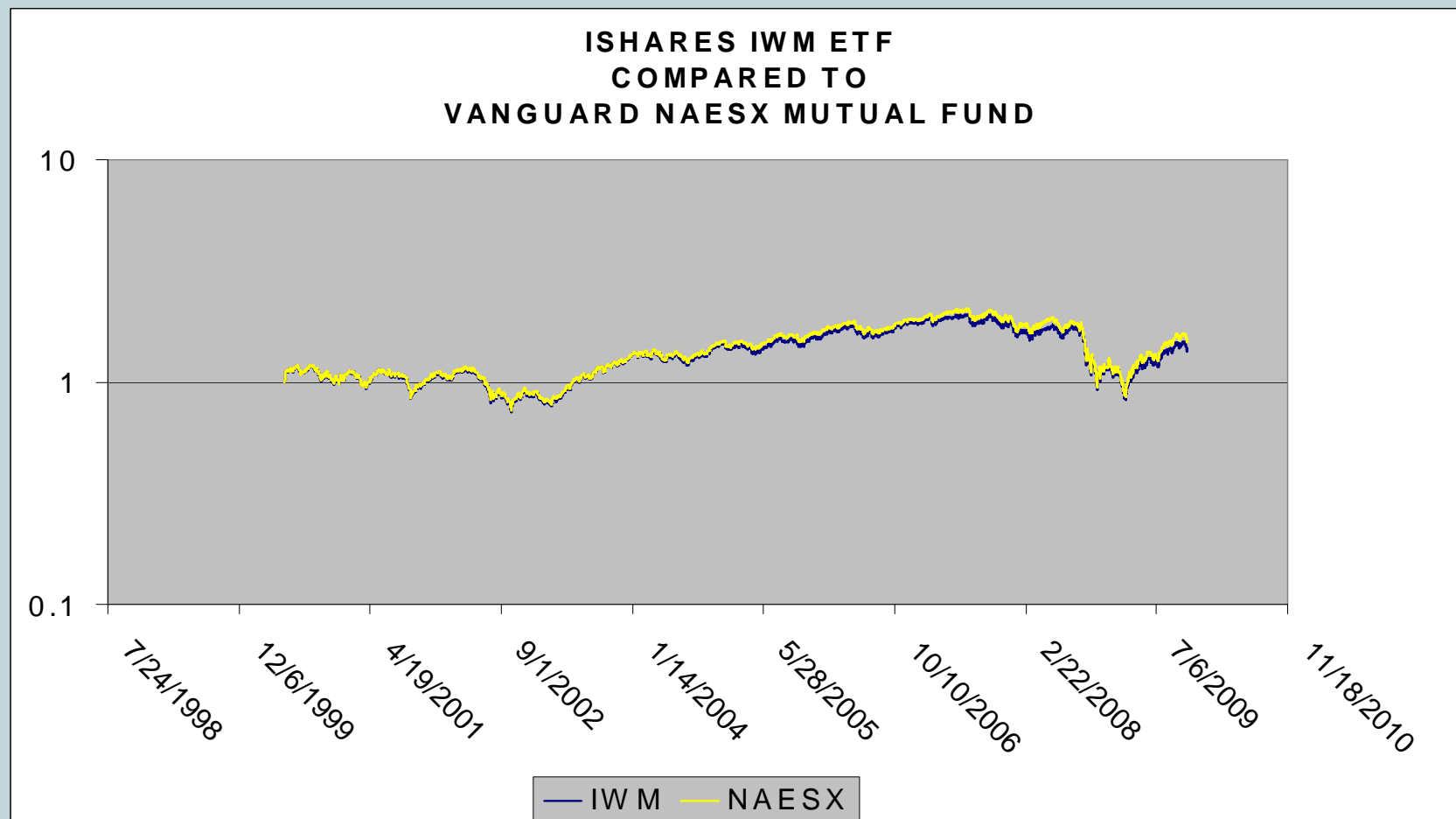
VISUAL COMARISON OF IWM TO OTHER HIGH-VOLUME INDEX ETFs



IWM (small cap stocks) has outperformed the other index funds and is more volatile. It is thus an ideal candidate for quantitative buy and sell methods. The equally volatile NASDAQ (QQQQ) might be a reasonable alternative, but has slightly underperformed IWM.



ETF COMPARED TO A MUTUAL FUND



The Vanguard fund slightly outperforms the iShares exchange traded fund, probably because of lower fees, but trading the mutual fund is severely restricted by Vanguard.



NEWS

Market summary

[Unemployment hits 10.2%](#)

CNNMoney.com - 31 minutes ago

The unemployment rate spiked to its highest level since 1983, much worse than expected as employers continue to trim jobs despite other signs of growth.

[Jobless Rate Hits 10.2%, a 26-Year High](#) New

York Times

[CORRECTED - US Oct payrolls fall 190000](#)

[jobless rate 10.2 pct](#) Reuters

[Wall Street Journal](#)

[MarketWatch](#) [Related articles »](#)

— Dow — S&P 500 — Nasdaq

+0.50%

+0.25%

0.00%

-0.25%

[Dow](#) 10,005.96 +203.82 (2.08%)

[S&P 500](#) 1,066.63

[Nasdaq](#) 2,105.32 0.00 (0.00%)

Top stories

Market

[Portfolio related](#)

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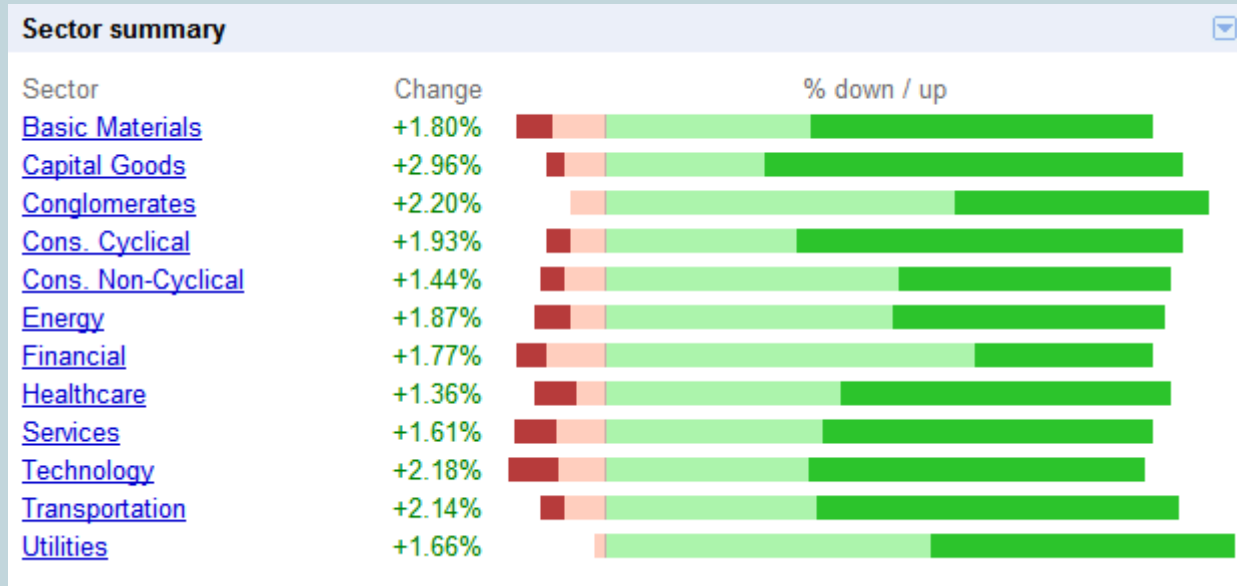
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Wall Street Journal - 22 minutes ago - [Related articles »](#)

[Job market report disappoints Wall Street](#) CNNMoney.com - 35 minutes ago - [Related articles »](#)

From <http://www.google.com/finance> on Friday, Nov. 6, 2009 at 9:25 EST

MARKET NEWS THE DAY BEFORE



GREED – THIS IS WHAT THE MARKET DID THE DAY BEFORE THE NEWS ON THE PREVIOUS SLIDE. TODAY (FRIDAY NOV. 6) IS RATIONAL AT NOON EST. LET’S SEE WHAT HAPPENS MONDAY!

From <http://www.google.com/finance> for November 5, 2009 after the close

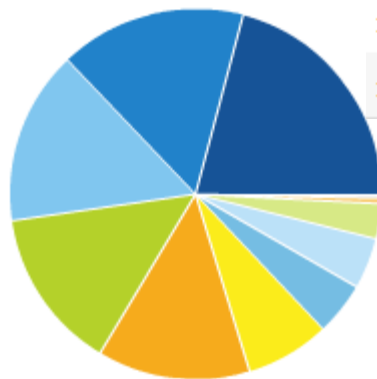


IWM ETF INFORMATION

Sector Breakdown as of 11/5/2009

[View all holdings](#)

Financial Services	20.85%
Technology	16.26%
Consumer Discretionary	15.16%
Health Care	14.12%
Producer Durables	13.31%
Materials & Processing	7.31%
Energy	4.67%
Utilities	4.46%
Consumer Staples	3.03%
Autos & Transportation	0.48%
Other/Undefined	0.34%



Total Net Assets	\$10,863,433,371
Expense Ratio	0.24%
Shares Outstanding	186,750,000
Total Holdings	2011
Inception Date	5/22/2000
Related Index	RU20INTR

Average Annualized Total Returns (NAV)

quarterly, as of 9/30/2009

[View all performance](#)

	1 Year	3 Years	5 Years	10 Years	Since Inception
IWM	-9.38%	-4.49%	2.41%	--	3.90%
Index ⓘ	-9.55%	-4.57%	2.41%	4.88%	4.04%

Top Daily Holdings*

as of 11/5/2009

[View all holdings](#)

HUMAN GENOME SCIENCES INC	0.52%
BGIF TREASURY MONEY MARKET SL AGENCY SHARES	0.37%
TUPPERWARE BRANDS CORP	0.33%
SOLERA HOLDINGS INC	0.29%
BALLY TECHNOLOGIES INC	0.27%
E*TRADE FINANCIAL CORP	0.25%
3COM CORP	0.24%
J CREW GROUP INC	0.24%
MFA Financial Inc	0.24%
HIGHWOODS PROPERTIES INC	0.24%
Total	2.99%

From http://us.ishares.com/product_info/fund/overview/IWM.htm



WHAT WE KNOW NOW

- **There is currently an epic battle going on between bulls and bears, made worse by the psychological Dow 10,000 barrier.**
- **IWM is fairly new (inception 5/22/200) so there's sufficient data on which to back-test, but not enough to cover things like stagflation.**
- **It's heavily concentrated in particularly hard-hit sectors like financials and consumer durables therefore this is a recovery bet.**
- **The fund is large and therefore liquid.**



SPREADSHEET ANALYSIS PROGRAM

- **THE FOLLOWING ANALYSIS WAS DONE WITH A NEW OPEN-SOURCE EXCEL PROGRAM THAT WIL BE POSTED BY TOMORROW EVENING ON THE CHAPTER WEBSITE AFTER THIS SEMINAR.**
- **THE WEBSITE IS www.siliconvalleyaaii.org. GO TO THE PRESENTATIONS PAGE AND LOOK IN “DOWNLOADS” UNDER THE ANNOUNCEMENT FOR THIS SEMINAR.**
- **THIS IS A PRELIMINARY VERSION OF THE PROGRAM WITH A VERY PRELIMINARY MANUAL. IT WILL BE UPDATED IN THE NEAR FUTURE.**



WHAT IT DOES

- **Downloads historical data from Yahoo Finance.**
- **Finds optimum settings for several popular buy/sell methods.**
- **Back-tests the same buy/sell methods using user-specified settings.**
- **Displays data for both optimum and user-specified settings to help evaluate both the performance achieved and how sensitive that performance is to changes in market conditions and settings used.**
- **The program is open source and free of charge. It is entirely without warranty (see the accompanying Gnu General Public License), and is intended solely as an example of how spreadsheets can be used as an investment analysis tool.**



THE INPUT WORKSHEET

Ticker	Sector	Messages
IWM	ETF	
QQQQ	ETF	
SPY	ETF	
DIA	ETF	

Sample Period (d, w, or m) d
From Date (m/d/yr) 5/26/2000
To Date (m/d/yr) 10/30/2009

DOWNLOAD DATA

OPTIMIZE

BACKTEST

Sample Period Day (d), Week (w), or Month (m)
d

From Date (m/d/yr)
5/26/2000

To Date (m/d/yr)
10/30/2009

A Sample Program for Testing Risk Control Strategies

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By
Robert C. Smithson

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The gray areas are for inputs. Other areas are protected without a password. Don't change them lightly. The green buttons will: 1. Download data from Yahoo Finance Historical Data, 2. Find optimum parameters for your choice of several Buy/Sell methods, and 3. Back-test a specified set of parameters.



INPUT DIALOG BOXES

Optimization Methods

Buy Method

Buy if X% Change (High, Low, Inc) in N Periods

10.0 -10.0 1.0
High Low Increment

5 0 0
In N Periods Fixed Value 2 Fixed Value 3

Sell Method

Trailing Stop (%)
Fixed Price Stop (%)
Protect Profits (%)

20.0 0.0 1.0
High Low Increment

0 0 0
Fixed Value 1 Fixed Value 2 Fixed Value 3

Cancel Enter

Selects methods and setting ranges over which to optimize.

Input Source

Enter Source

OK Cancel

Data

Selects sheet with data to analyze.

Destination Worksheet

Enter Destination Worksheet

Data

Selects sheet to which data is downloaded.

Backtest

Buy Method

Buy if X% Change in N Periods

5.0
% Change

5 0 0
In N Periods Fixed Value 2 Fixed Value 3

Sell Method

Trailing Stop (%)
Fixed Price Stop (%)
Protect Profits (%)

5.0
% Change

0 0 0
Fixed Value 1 Fixed Value 2 Fixed Value 3

Cancel Enter

Selects methods and specific settings to analyze.



THE OPTIMIZER RESULTS WORKSHEET

	Sell Method	Buy Method	Start Date	Stop Date	Period
	TS	5 day % Change	5/26/00	10/30/09	day
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	1.675%	2.087%	1.405%	1.333%	
Mean Return	0.027%	-0.004%	0.004%	0.014%	
Buy & Hold Return	37.156%	-45.885%	-12.155%	13.613%	
Max Buy & Hold Draw Down	-58.860%	-80.450%	-55.189%	-52.322%	
Max Draw Down Date	03/09/09	10/09/02	03/09/09	03/09/09	
Opt Sell	17.000%	1.000%	9.000%	9.000%	
Opt Buy	-9.000%	-8.000%	8.000%	7.000%	
Opt Return	170.518%	105.687%	105.678%	97.478%	
Opt Drawdown	-29.225%	-23.051%	-25.348%	-24.654%	
Total Trades with Opt Strategy	14	90	12	14	
Winning Sales	4	26	2	3	
Losing Sales	3	19	4	4	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	09/17/01 B	07/27/00 B	07/29/02 B	04/10/01 B
	07/02/02 SW	07/31/00 SL	09/17/02 SL	07/06/01 SW
	07/23/02 B	08/02/00 B	10/15/02 B	07/29/02 B
	10/07/02 SL	08/09/00 SW	01/27/03 SL	09/17/02 SL
	10/09/02 B	09/11/00 B	03/18/03 B	10/15/02 B
	01/08/08 SW	09/15/00 SL	08/15/07 SW	01/27/03 SL
	09/29/08 B	10/11/00 B	10/31/08 B	03/17/03 B
	10/14/08 SL	10/17/00 SW	11/06/08 SL	11/21/07 SW
	10/24/08 B	10/30/00 B	11/26/08 B	10/31/08 B
	11/18/08 SL	11/07/00 SW	01/14/09 SL	11/06/08 SL
	11/19/08 B	11/10/00 B	03/12/09 B	11/26/08 B
	02/18/09 SW	11/16/00 SW	10/30/09 SW	01/14/09 SL
	02/23/09 B	11/21/00 B		03/12/09 B
	10/30/09 SW	11/27/00 SL		10/30/09 SW
		11/29/00 B		

This contains a list of statistics for each input ticker, allowing performance comparisons between tickers and between optimized and buy-and-hold results.



				BUY	VALUES																		
	IWM	-0.1	-0.09	-0.08	-0.07	-0.06	-0.05	-0.04	-0.03	-0.02	-0.01	-1E-17	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11
	0	5.805279	-2.54929	-4.40918	-2.68594	-4.36586	20.4662	-10.7829	53.64385	34.30514	52.56743	61.56962	-33.475	-53.3921	-59.2021	-45.6928	-36.5742	-39.3809	-35.7012	-24.2221	-19.8096	-17.829	-17.829
SELL	-0.01	10.22909	1.525207	-7.54076	3.273731	11.8023	26.46739	2.513346	38.52354	28.9914	-5.53436	-3.20127	-48.516	-64.342	-66.8291	-53.9528	-51.496	-38.7092	-32.6561	-17.3097	-20.6037	-18.8606	-18.8606
VALUES	-0.02	8.612108	-5.09414	-14.7858	-7.78028	7.953493	10.69151	-7.64992	17.70757	14.29947	36.39476	44.87498	-37.8286	-58.9534	-59.9689	-42.5678	-44.8819	-38.5218	-35.5607	-24.2058	-26.1914	-22.7983	-22.7983
	-0.03	-6.00811	-11.6804	-4.83346	-3.98811	17.82811	-9.31085	-49.2476	-27.102	-13.7919	43.59266	46.54458	-34.4161	-59.5429	-55.5253	-49.071	-48.0811	-48.1463	-46.7869	-33.7768	-32.6221	-27.1602	-27.1602
	-0.04	-6.63376	-14.3847	-1.13763	-10.3586	12.69354	29.41396	-2.43107	40.41834	20.33268	14.95456	49.70131	-19.5126	-36.212	-31.4193	-27.1855	-31.0476	-32.1158	-38.1442	-35.8317	-36.1242	-29.7772	-29.7772
	-0.05	-6.95274	-19.2171	-8.84191	-8.61327	11.27865	42.60518	1.057616	42.36181	15.7895	9.020441	43.70449	15.49792	-5.64977	4.33083	8.948514	3.731499	1.008559	-30.7794	-26.1956	-29.9304	-22.968	-22.968
	-0.06	-10.5663	-22.3536	-13.2723	-12.2747	-6.39446	3.000679	-0.84519	10.9661	26.06391	7.439919	24.66717	13.72255	-4.70563	3.232555	-0.40059	2.678632	12.55306	-26.2141	-26.108	-26.8695	-22.9602	-22.9602
	-0.07	3.350826	-8.50375	-4.60793	13.9485	-18.8501	19.46705	-16.7021	-15.7634	17.0091	20.60818	50.2204	51.97946	-30.4611	20.20241	-1.98397	14.6236	17.18331	-27.5027	-23.3945	-20.0838	-15.1218	-15.1218
	-0.08	43.30979	26.09074	22.93541	8.301396	-36.0849	-5.7273	-33.4885	3.687399	24.28924	17.78047	32.39736	49.808	28.48506	22.17693	7.712504	4.764582	10.69817	-26.1711	-17.2012	-13.6229	-13.6229	-13.6229
	-0.09	34.90154	21.03391	21.09436	-5.31878	-45.7541	33.7753	-48.3096	-0.17044	23.0827	18.44249	29.17745	27.96337	27.90412	15.83286	3.589837	-4.02466	7.893611	-35.6708	-26.102	-20.8449	-20.8449	-20.8449
	-0.1	-2.9176	-15.3739	38.30675	-2.82131	-34.1556	6.160566	-28.9778	16.03149	10.06128	11.00237	27.31577	58.71944	38.55167	35.09561	7.617617	-10.9788	6.470646	-31.8319	-15.7375	-9.03804	-9.03804	-9.03804
	-0.11	-4.88295	-20.396	-24.4498	-30.4092	-12.5552	4.867262	-24.6778	11.84178	8.802126	8.622732	28.5764	28.63447	11.3407	15.03725	-15.7994	-29.3548	-8.22655	-39.8394	-20.6882	-14.3824	-14.3824	-14.3824
	-0.12	-11.7238	-14.4421	32.04982	12.5336	-3.81383	15.26092	-27.0184	4.469319	-1.7469	4.562185	18.72279	33.53908	15.58593	30.57231	12.49087	-19.1938	-0.49388	-38.5269	-18.352	-11.8604	-11.8604	-11.8604
	-0.13	-13.1344	-9.3515	28.04891	8.032415	-8.6348	-16.5216	-34.4702	-3.50888	-5.53785	1.090543	18.10606	35.50004	17.26243	15.75072	5.597788	-17.9631	-15.1887	-45.023	-23.1605	-17.0512	-17.0512	-17.0512
	-0.14	-16.0675	-13.9893	-29.9657	-30.9641	-13.8039	-3.71369	-29.5136	-26.9955	-6.96893	2.146118	22.17233	44.19731	27.76572	20.72527	16.70312	-11.1107	-18.0873	-45.9974	-27.3891	-19.8109	-19.8109	-19.8109
	-0.15	-18.5947	-17.1494	-35.1225	-30.609	4.39887	1.645495	-32.5795	-23.1834	8.436229	-0.41827	9.198421	26.66225	19.08417	12.52211	12.52211	-3.12398	18.0279	-48.5989	-28.1073	-20.604	-20.604	-20.604
	-0.16	-21.552	71.67282	44.39611	51.76059	43.17435	19.70034	-19.9	4.854194	19.98516	9.595071	16.77163	47.96421	36.80668	28.53878	25.5434	19.83334	18.28932	21.70711	-33.4874	-25.5092	-25.5092	-25.5092
	-0.17	26.12571	170.5175	131.9397	103.109	31.68764	34.01397	-7.71893	1.56357	18.2076	9.595071	16.77163	39.09687	28.608	21.81796	18.02154	12.65185	11.20036	14.41333	-39.6043	-28.9853	-28.9853	-28.9853
	-0.18	8.968825	109.121	67.55486	49.43529	-35.6235	28.61914	-11.3077	3.745308	14.37141	7.985518	16.77163	35.17097	23.0895	16.59082	16.59082	12.70812	11.2559	7.291841	-48.8051	-38.859	-38.859	-38.859
	-0.19	5.37624	86.58921	52.54076	49.1467	0.775915	26.65966	-9.94491	-1.78896	15.8225	10.04336	23.69627	32.1691	24.26155	17.41419	17.41419	17.12402	15.61491	22.8307	-41.3907	-30.0041	-30.0041	-30.0041
	-0.2	8.296938	83.32406	51.05245	47.6915	-1.19438	29.14454	-29.3835	-6.68935	10.04336	10.04336	20.57554	21.6368	14.35938	8.057678	8.057678	7.790636	6.401782	15.79163	-44.205	-33.3652	-33.3652	-33.3652
				BUY	VALUES																		
	QQQQ	-0.1	-0.09	-0.08	-0.07	-0.06	-0.05	-0.04	-0.03	-0.02	-0.01	-1E-17	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11
	0	57.49617	77.59932	104.0069	74.08703	77.73156	105.3063	30.93488	47.14156	23.5046	63.9702	2.855554	-59.7151	-44.481	-35.4389	-37.8453	-16.282	-18.6495	-34.0173	-30.1975	-17.8196	-18.7098	7.96491
SELL	-0.01	45.65905	56.50146	105.6965	96.74545	49.777	61.69244	35.79433	34.24987	8.024958	54.40681	-3.73017	-63.6186	-53.7977	-49.2627	-40.9628	-24.701	-34.5842	-50.1273	-43.0303	-30.8797	-31.2349	-22.7647
VALUES	-0.02	12.65366	16.47531	34.639	2.291954	-22.0541	-18.8522	-32.367	-26.6206	-25.3818	8.79307	-1.00802	-71.6601	-56.4333	-58.3358	-54.0633	-26.716	-30.032	-47.5587	-43.1139	-25.3614	-29.232	-22.8796
	-0.03	10.88882	-1.18898	3.894747	-31.1784	-34.2547	-27.7138	-28.6994	-34.2491	-37.6554	-23.0453	-26.9903	-61.6397	-47.6703	-41.9475	-56.8535	-30.0352	-36.2689	-52.6754	-44.6632	-22.9152	-26.9128	-23.1499
	-0.04	27.7352	15.33168	8.076917	-35.0631	-17.5181	-13.083	-2.82273	-25.6703	-45.8937	-33.0574	-30.3529	-52.4564	-49.9002	-40.6338	-56.2546	-34.2398	-37.9746	-44.4585	-33.8943	-13.279	-27.8235	-24.1075
	-0.05	19.75309	-10.2168	-28.8779	-55.3842	-35.6051	-39.772	-23.864	-16.8217	-11.16	-9.31614	0.154989	-61.296	-53.3318	-38.8875	-54.7027	-42.4122	-48.0784	-59.2596	-49.0204	-30.2066	-47.1303	-37.3853
	-0.06	5.971647	-14.0323	-32.9175	-47.6999	-25.5761	-31.7868	-7.8272	11.76495	-15.1591	-6.28582	-3.0694	-59.1342	-62.0054	-45.7104	-58.3756	-39.7356	-43.9369	-52.8138	-39.5473	-30.5747	-49.7719	-44.7924
	-0.07	-12.8581	-31.2606	-47.1591	-49.6357	-35.3255	-57.7053	-27.1413	-41.2534	-43.3292	-10.0779	-4.36766	-60.4754	-59.3431	-53.7227	-63.294	-48.5054	-50.783	-53.127	-35.0227	-21.6498	-52.2549	-47.5216
	-0.08	-20.9695	-39.0785	-53.0847	-55.11	-40.4536	-72.2373	-39.5271	-39.0442	-38.9781	-19.4652	-17.7509	-63.4319	-66.0285	-60.1102	-60.7286	-41.9021	-36.7538	-39.0674	-14.158	8.796585	-22.9669	-21.6868
	-0.09	-31.9688	-57.4305	-56.5669	-54.803	-70.8706	-58.6699	-4.45285	-25.2188	-21.4956	-17.0484	-15.8379	-73.8214	-70.1045	-68.7529	-68.0014	-53.3691	-41.5078	-40.9542	-27.26525	14.23968	-27.5749	-26.3714
	-0.1	-14.6602	-52.9097	-50.0941	-31.6892	-71.8861	-45.9589	2.031244	-28.3438	-17.2744	-32.7834	-16.6343	-70.4193	-71.6147	-66.5511	-67.4925	-51.1453	-36.3759	-44.5368	-5.1203	27.26398	-19.3179	-17.9771
	-0.11	-23.4229	-41.4343	-36.6698	5.290934	-44.2735	-62.1732	-40.3749	-38.0717	-11.3991	-30.5866	-28.7557	-75.227	-77.2529	-74.8276	-75.5361	-59.0093	-43.98	-49.1499	-21.0902	7.44067	-31.8853	-30.7534
	-0.12	-16.7364	-37.8421	-33.2519	7.097221	-39.1413	-60.4913	-49.6157	-36.4943	-25.5882	-35.5294	-37.9004	-73.5244	-71.9289	-69.8304	-70.8729	-47.8124	-39.6578	-42.2483	-22.0042	-0.56494	-36.9607	-35.9131
	-0.13	-41.5861	-46.46	-53.6725	-36.1937	-56.6457	-53.6223	-40.8777	-31.4672	-27.202	-33.5237	-42.3855	-71.7952	-71.9512	-68.4986	-68.8496	-42.5622	-38.201	-35.4173	-21.9248	-21.8228	-50.4376	-49.614
	-0.14	-47.5136	-52.0679	-58.5058	-42.4817	-56.1535	-57.7525	-48.6226	-39.0792	-39.9008	-39.0935	-49.4312	-73.5196	-73.3224	-68.6051	-71.4415	-41.7328	-45.5218	-42.3811	-17.7251	-17.0634	-47.4203	-54.678
	-0.15	-40.0019	-60.4802	-66.8051	-56.3925	-56.9827	-59.442	-51.48	-34.976	-43.136	-49.403	-43.8532	-72.1091	-72.3905	-69.7534	-71.263	-54.5186	-53.2387	-51.3533	-30.5366	-28.468	-54.6505	-60.729
	-0.16	-49.2588	-61.832	-55.8929	-64.856	-65.2326	-59.2922	-45.0884	-27.452	-44.7613	-37.2711	-46.3257	-71.9802	-68.7822	-64.6271	-66.0543	-50.0015	-38.5488	-45.169	-21.7059	-18.6612	-48.4332	-54.7933
	-0.17	-48.8406	-64.1322	-63.422	-72.44	-55.9896	-65.6431	-50.1802	-45.3083	-54.4418	-47.3633	-46.3257	-70.5092	-61.951	-65.2954	-67.0439	-50.2807	-50.2764	-54.3513	-40.2828	-35.0735	-58.8382	-63.915
	-0.18	-52.4038	-39.6465	-30.4285	-37.0254	-68.1269	-64.8338	-40.1086	-38.9411	-37.4952	-47.3908	-49.3428	-72.077	-63.2827	-66.5752	-66.9951	-51.7466	-51.041	-46.095	-29.4819	-23.3304	-51.3934	-57.3884
	-0.19	-24.7575	-24.4208	13.6952	-6.79454	-53.0374	-57.328	-41.9836	-45.6829	-52.3878	-59.0245	-47.9267	-55.4999	-46.7881	-49.1817	-49.2911	-49.6587	-49.9413	-44.8841	-27.8979	-21.4161	-28.7239	-37.5148
	-0																						

[illegible]



THE BACK-TEST RESULTS WORKSHEET

	Sell Method	Buy Method	Start Date	Stop Date	Period
	TS	5 day 1 % Change	5/26/00	10/30/09	day
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	1.675%	2.087%	1.405%	1.333%	
Mean Return	0.027%	-0.004%	0.004%	0.014%	
Buy & Hold Return	37.156%	-45.885%	-12.155%	13.613%	
Max Buy & Hold Draw Down	-58.860%	-80.450%	-55.189%	-52.322%	
Max Draw Down Date	03/09/09	10/09/02	03/09/09	03/09/09	
Opt Sell	10.000%	10.000%	10.000%	10.000%	
Opt Buy	1.000%	1.000%	1.000%	1.000%	
Opt Return	58.719%	-70.419%	-11.379%	6.341%	
Opt Drawdown	-11.851%	-14.404%	-13.676%	-15.499%	
Total Trades with Opt Strategy	50	86	38	34	
Winning Sales	8	9	4	5	
Losing Sales	17	34	15	12	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	06/05/00 B	06/05/00 B	06/05/00 B	06/05/00 B
	07/28/00 SL	07/28/00 SL	10/11/00 SL	10/12/00 SL
	08/04/00 B	08/04/00 B	10/19/00 B	10/19/00 B
	10/09/00 SL	09/12/00 SW	12/20/00 SL	03/16/01 SL
	10/19/00 B	09/19/00 B	12/27/00 B	03/27/01 B
	11/29/00 SL	10/03/00 SL	02/28/01 SL	07/10/01 SW
	12/05/00 B	10/18/00 B	03/07/01 B	07/13/01 B
	03/12/01 SL	10/30/00 SL	03/21/01 SL	09/17/01 SL
	03/27/01 B	11/01/00 B	03/27/01 B	09/27/01 B
	09/05/01 SW	11/10/00 SL	07/24/01 SL	06/11/02 SW
	09/27/01 B	11/15/00 B	07/30/01 B	06/18/02 B
	06/06/02 SW	11/22/00 SL	09/07/01 SL	07/12/02 SL



HOW OFTEN SHOULD YOU LOOK?

- **ONE WAY TO FIT THIS PROCESS TO YOUR INVESTING STYLE IS TO SELECT A SAMPLING INTERVAL OF ONE DAY IF YOU WANT TO REBALANCE EVERY DAY, ONE WEEK IF EVERY WEEK, AND ONE MONTH IF EVERY MONTH.**
- **IN GENERAL, WITHOUT COUNTING TRADING COSTS AND BID-ASK SPREADS (WHICH CAN BE *VERY* IMPORTANT), THE MORE OFTEN YOU LOOK AT YOUR SITUATION THE BETTER YOU SHOULD DO. LET'S SEE IF THAT'S TRUE.**



DAILY TRAILING STOP RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	TS	5 day % Change	5/26/00	10/30/09	day
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	1.675%	2.087%	1.405%	1.333%	
Mean Return	0.027%	-0.004%	0.004%	0.014%	
Buy & Hold Return	37.156%	-45.885%	-12.155%	13.613%	
Max Buy & Hold Draw Down	-58.860%	-80.450%	-55.189%	-52.322%	
Max Draw Down Date	03/09/09	10/09/02	03/09/09	03/09/09	
Opt Sell	17.000%	1.000%	9.000%	9.000%	
Opt Buy	-9.000%	-8.000%	8.000%	7.000%	
Opt Return	170.518%	105.687%	105.678%	97.478%	
Opt Drawdown	-29.225%	-23.051%	-25.348%	-24.654%	
Total Trades with Opt Strategy	14	90	12	14	
Winning Sales	4	26	2	3	
Losing Sales	3	19	4	4	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	09/17/01 B	07/27/00 B	07/29/02 B	04/10/01 B
	07/02/02 S	07/31/00 S	09/17/02 S	07/06/01 S
	07/23/02 B	08/02/00 B	10/15/02 B	07/29/02 B
	10/07/02 S	08/09/00 S	01/27/03 S	09/17/02 S
	10/09/02 B	09/11/00 B	03/18/03 B	10/15/02 B
	01/08/08 S	09/15/00 S	08/15/07 S	01/27/03 S
	09/29/08 B	10/11/00 B	10/31/08 B	03/17/03 B
	10/14/08 S	10/17/00 S	11/06/08 S	11/21/07 S
	10/24/08 B	10/30/00 B	11/26/08 B	10/31/08 B
	11/18/08 S	11/07/00 S	01/14/09 S	11/06/08 S
	11/19/08 B	11/10/00 B	03/12/09 B	11/26/08 B
	02/18/09 S	11/16/00 S	10/30/09 S	01/14/09 S
	02/23/09 B	11/21/00 B		03/12/09 B
	10/30/09 S	11/27/00 S		10/30/09 S
		11/29/00 B		





WEEKLY TRAILING STOP RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	TS	4 week % Change	6/10/00	10/30/09	week
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	3.314%	3.976%	2.709%	2.618%	
Mean Return	0.104%	-0.074%	0.005%	0.058%	
Buy & Hold Return	26.584%	-52.898%	-14.622%	12.233%	
Max Buy & Hold Draw Down	-57.895%	-80.170%	-54.614%	-51.395%	
Max Draw Down Date	03/02/09	09/30/02	03/02/09	03/02/09	
Opt Sell	4.000%	6.000%	8.000%	8.000%	
Opt Buy	-8.000%	11.000%	-10.000%	-10.000%	
Opt Return	173.325%	58.173%	132.451%	194.450%	
Opt Drawdown	-58.821%	-78.472%	-54.354%	-52.322%	
Total Trades with Opt Strategy	36	16	16	16	
Winning Sales	13	4	4	5	
Losing Sales	5	4	4	3	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	10/02/00 B	08/21/00 B	03/12/01 B	09/10/01 B
	11/06/00 S	09/05/00 S	08/13/01 S	06/03/02 S
	11/27/00 B	01/22/01 B	09/10/01 B	07/15/02 B
	02/20/01 S	01/29/01 S	04/22/02 S	09/16/02 S
	03/12/01 B	04/16/01 B	07/15/02 B	09/23/02 B
	06/18/01 S	06/11/01 S	09/23/02 S	01/21/03 S
	09/10/01 B	10/15/01 B	02/03/03 B	02/03/03 B
	01/14/02 S	01/14/02 S	12/31/07 S	12/31/07 S
	06/10/02 B	10/21/02 B	01/14/08 B	01/14/08 B
	07/01/02 S	12/09/02 S	06/23/08 S	06/16/08 S
	07/08/02 B	05/05/03 B	09/29/08 B	10/06/08 B
	08/05/02 S	03/08/04 S	11/03/08 S	11/10/08 S
	09/30/02 B	12/15/08 B	01/26/09 B	01/26/09 B
	12/09/02 S	01/20/09 S	02/17/09 S	02/17/09 S
	02/03/03 B	03/23/09 B	02/23/09 B	02/23/09 B
	08/04/03 S	10/26/09 S	10/26/09 S	10/26/09 S





MONTHLY TRAILING STOP RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	TS	1 month % Change	6/10/00	10/30/09	month
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	5.992%	8.288%	4.641%	4.453%	
Mean Return	0.388%	-0.355%	-0.060%	0.184%	
Buy & Hold Return	25.894%	-54.925%	-17.227%	9.849%	
Max Buy & Hold Draw Down	-52.723%	-79.612%	-50.782%	-47.527%	
Max Draw Down Date	02/02/09	09/03/02	02/02/09	02/02/09	
Opt Sell	2.000%	13.000%	10.000%	11.000%	
Opt Buy	5.000%	11.000%	-10.000%	-9.000%	
Opt Return	143.092%	42.887%	124.289%	98.913%	
Opt Drawdown	-58.821%	-78.472%	-54.354%	-52.322%	
Total Trades with Opt Strategy	24	10	6	8	
Winning Sales	7	2	2	2	
Losing Sales	5	3	1	2	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	08/01/00 B	08/01/00 B	09/03/02 B	09/04/01 B
	09/01/00 S	10/02/00 S	01/02/08 S	07/01/02 S
	12/01/00 B	04/02/01 B	10/01/08 B	09/03/02 B
	02/01/01 S	08/01/01 S	01/02/09 S	07/01/08 S
	04/02/01 B	10/01/01 B	02/02/09 B	10/01/08 B
	07/02/01 S	02/01/02 S	10/01/09 S	01/02/09 S
	10/01/01 B	10/01/02 B		02/02/09 B
	02/01/02 S	01/02/08 S		10/01/09 S
	03/01/02 B	04/01/09 B		
	05/01/02 S	10/01/09 S		
	11/01/02 B			
	12/02/02 S			
	04/01/03 B			
	04/01/04 S			
	09/01/04 B			
	01/03/05 S			



MONTHLY TRAILING STOP TABLES

		BUY				VALUES																			
IWM		-0.1	-0.09	-0.08	-0.07	-0.06	-0.05	-0.04	-0.03	-0.02	-0.01	-1E-17	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11		
SELL VALUES	0	66.77785	11.53771	18.76639	-7.3496	-16.3597	-20.5136	-27.1004	-24.1903	-45.8115	-17.673	-29.8559	98.26634	95.50828	80.38969	88.80626	116.787	88.65121	66.69731	42.24723	46.02041	48.64872	21.14428		
	-0.01	48.63086	-0.59864	3.495425	-19.2626	-27.1142	-25.1765	-31.377	-20.705	-38.242	-12.3072	-29.8559	113.7748	120.0234	103.0091	112.481	140.4625	82.78796	61.51638	42.24723	46.02041	48.64872	21.14428		
	-0.02	48.63086	-0.59864	3.495425	-19.2626	-15.9536	-25.1765	-31.377	-20.705	-44.9866	-15.7564	-32.6149	116.1127	122.4296	105.2292	114.8047	143.0922	98.68958	75.56749	54.62201	68.42804	71.45969	21.14428		
	-0.03	48.63086	-0.59864	3.495425	-19.2626	-16.6501	-40.0344	-48.7079	-28.6612	-40.2028	-24.697	-39.7663	96.0532	113.8827	97.34324	106.5508	133.7514	91.05489	75.56749	54.62201	68.42804	71.45969	21.14428		
	-0.04	54.05966	3.03204	7.275637	-16.3136	-8.57632	-40.0344	-31.9885	-24.5083	-40.2028	-26.8279	-41.4708	101.3546	119.6662	102.6795	112.1361	140.0722	96.22115	88.7628	54.62201	68.42804	71.45969	21.14428		
	-0.05	45.11606	-2.94926	3.340517	-19.3834	-16.899	-40.0344	-31.9885	-27.8736	-40.2028	-20.4652	-13.9142	104.3491	104.3491	88.54685	97.34401	123.3321	82.5388	75.60051	52.70532	66.34021	71.45969	21.14428		
	-0.06	45.11606	35.68529	41.47924	10.36884	7.33443	-11.0754	0.855931	-2.03172	-18.7783	8.030997	33.18346	93.22146	93.22146	85.83054	94.50097	105.195	80.59571	52.54576	32.6565	55.75909	70.17965	21.14428		
	-0.07	45.11606	29.38766	34.91269	5.246234	7.33443	-11.0754	0.855931	-2.03172	-14.2643	14.03495	29.95918	80.31963	80.31963	74.53972	82.68334	92.72762	69.62296	43.27728	24.59646	53.41594	67.61957	21.14428		
	-0.08	31.10711	-16.3878	-15.4256	2.097712	-2.94245	-19.5896	-31.5796	-12.8822	-14.2643	14.03495	29.95918	29.86434	29.86434	34.49468	34.49468	43.77792	26.54147	18.73099	3.250574	53.41594	67.61957	21.14428		
	-0.09	32.61591	-15.4256	-15.4256	2.097712	-2.94245	3.711821	-5.28722	-6.22137	-1.13624	14.03495	29.95918	21.70259	21.70259	21.70259	21.70259	64.58531	64.58531	54.42666	34.29216	80.09175	80.09175	21.14428		
	-0.1	32.61591	-15.4256	-15.4256	2.097712	-2.94245	-3.32613	-11.7145	-12.5853	-8.60883	5.415643	29.95918	0.121192	0.121192	0.121192	0.121192	53.82506	53.82506	44.33057	25.51242	80.09175	80.09175	21.14428		
	-0.11	23.50244	-21.2376	66.06417	100.4716	94.59739	51.20488	38.08488	36.72295	40.27587	40.27587	27.80219	2.066233	2.066233	2.066233	2.066233	56.8134	56.8134	75.14088	75.78589	128.5035	128.5035	21.14428		
	-0.12	23.50244	47.51892	47.51892	78.0839	72.8657	62.83888	38.08488	36.72295	40.27587	40.27587	27.80219	10.49648	10.49648	10.49648	10.49648	69.76554	69.76554	89.60679	90.30508	128.5035	128.5035	21.14428		
	-0.13	23.50244	47.51892	47.51892	78.0839	72.8657	62.83888	38.08488	36.72295	40.27587	40.27587	27.80219	10.49648	10.49648	10.49648	10.49648	69.76554	69.76554	89.60679	90.30508	128.5035	128.5035	21.14428		
	-0.14	23.50244	47.51892	47.51892	78.0839	72.8657	46.45282	38.08488	36.72295	40.27587	40.27587	27.80219	10.49648	10.49648	10.49648	10.49648	69.76554	69.76554	89.60679	90.30508	128.5035	128.5035	21.14428		
	-0.15	23.50244	47.51892	47.51892	78.0839	72.8657	46.45282	38.08488	36.72295	40.27587	40.27587	23.58893	10.49648	10.49648	10.49648	10.49648	69.76554	69.76554	89.60679	90.30508	128.5035	128.5035	21.14428		
	-0.16	23.50244	43.19633	43.19633	72.8657	72.8657	46.45282	38.08488	36.72295	40.27587	40.27587	23.58893	7.258723	7.258723	7.258723	7.258723	64.79109	64.79109	84.05095	84.72877	121.8079	121.8079	21.14428		
	-0.17	-22.2444	-29.3113	44.67417	74.64972	74.64972	74.64972	57.22782	50.19128	40.27587	40.27587	23.58893	15.85865	15.85865	15.85865	15.85865	78.00392	78.00392	84.05095	84.72877	121.8079	121.8079	21.14428		
-0.18	-22.2444	-29.3113	43.47533	73.20249	73.20249	55.92495	48.94673	40.27587	40.27587	23.58893	14.89859	14.89859	14.89859	14.89859	14.89859	76.52889	76.52889	82.52582	83.19802	119.9699	119.9699	21.14428			
-0.19	-22.2444	-29.3113	75.11491	75.11491	75.11491	75.11491	57.6466	50.59132	41.82472	41.82472	23.58893	20.12749	20.12749	20.12749	20.12749	39.23183	39.23183	43.96172	44.49191	73.49462	73.49462	21.14428			
-0.2	-22.2444	-29.3113	75.11491	75.11491	75.11491	75.11491	57.6466	50.59132	55.79563	55.79563	40.11831	20.12749	20.12749	20.12749	20.12749	39.23183	39.23183	43.96172	44.49191	73.49462	73.49462	21.14428			
		BUY				VALUES																			
QQQQ		-0.1	-0.09	-0.08	-0.07	-0.06	-0.05	-0.04	-0.03	-0.02	-0.01	-1E-17	0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09	0.1	0.11		
SELL VALUES	0	-46.3643	-53.7706	-60.0568	-66.9511	-67.1298	-57.2883	-47.0339	-47.6109	-42.6231	-23.6046	-41.0367	-2.75203	8.308326	7.642876	4.715579	-5.8516	-15.9952	0.717835	14.54839	-3.55441	-3.55441	15.61336		
	-0.01	-46.3643	-53.7706	-60.0568	-68.3749	-72.7735	-64.6218	-56.128	-56.606	-53.9296	-38.6186	-42.0297	-7.24349	3.306039	16.51027	13.34183	1.904151	-15.9952	0.717835	14.54839	-3.55441	-3.55441	15.61336		
	-0.02	-46.3643	-53.7706	-60.0568	-68.3749	-72.7735	-64.6218	-40.6761	-37.9725	-35.4781	-28.2324	-45.6023	8.828839	19.39588	32.40261	26.06615	6.37091	-12.313	3.241813	11.07747	-4.54738	-4.54738	14.42305		
	-0.03	-48.0117	-55.1905	-61.2836	-65.9783	-70.1889	-61.2634	-35.0447	-26.5941	-34.5404	-23.8654	-42.2922	0.170412	9.896743	19.12508	13.42405	-4.29612	-21.1064	-7.11143	5.754292	-16.2594	-16.2594	0.383409		
	-0.04	-48.0117	-55.1905	-61.2836	-65.9783	-70.1889	-61.2634	-13.255	-19.0314	-27.7963	-16.0215	-47.273	6.825301	17.19781	16.07429	10.51926	-6.7471	-23.1269	-9.49031	1.379198	-21.8357	-21.8357	-6.30113		
	-0.05	-45.2434	-44.8897	-52.3835	-41.9113	-42.2253	-24.9275	-13.255	-19.0314	-27.7963	-16.0215	-47.273	6.825301	17.19781	16.07429	10.51926	-6.7471	-23.1269	-9.49031	1.379198	-21.8357	-21.8357	-6.30113		
	-0.06	-48.8896	-48.5595	-55.5543	-45.7794	-46.0726	-29.9265	-19.0314	-19.0314	-27.7963	-16.0215	-47.273	6.825301	17.19781	16.07429	10.51926	-6.7471	-23.1269	-9.49031	1.379198	-21.8357	-21.8357	-6.30113		
	-0.07	-48.8896	-48.5595	-55.5543	-62.0457	-62.0457	-50.682	-41.9445	-41.9445	-40.7964	-34.1479	-43.3439	-3.30652	6.082206	5.065245	0.03708	-15.5917	-33.5843	-20.0413	1.738486	-21.8357	-21.8357	-6.30113		
	-0.08	-61.2277	-60.9773	-65.7409	-62.0457	-62.0457	-50.682	-44.4456	-44.4456	-43.3469	-44.5431	-44.5431	-0.52782	9.130718	-2.02718	-6.71592	-21.2896	-38.0677	-25.439	-5.12936	-21.8357	-21.8357	-6.30113		
	-0.09	-61.2277	-60.9773	-65.7409	-63.7027	-63.7027	-52.8352	-46.8711	-46.8711	-45.8204	-44.5431	-44.5431	-4.87073	4.366112	-6.30463	-10.7887	-24.7261	-40.7716	-25.439	-5.12936	-21.8357	-21.8357	-6.30113		
	-0.1	-70.6023	-70.6023	-74.1248	-67.9879	-67.9879	-52.8352	-46.8711	-46.8711	-45.8204	-44.5431	-44.5431	-11.979	-18.4914	-26.8251	-26.8251	-38.2572	-48.4986	-41.4795	-13.61	-31.4307	-31.4307	-17.8032		
	-0.11	-70.6023	-70.6023	-74.1248	-67.9879	-67.9879	-52.8352	-46.8711	-46.8711	-45.8204	-44.5431	-44.5431	-11.979	-18.4914	-26.8251	-26.8251	-38.2572	-48.4986	-41.4795	-13.61	-31.4307	-31.4307	-17.8032		
	-0.12	-62.5957	-62.5957	-62.5957	-54.2762	-54.2762	-32.6331	-24.1143	-24.1143	-28.1249	-44.5431	-44.5431	-12.7022	-19.1611	-27.4264	-27.4264	-27.4264	-27.4264	-12.8819	5.577269	-31.4307	-31.4307	-17.8032		
	-0.13	-46.337	-53.7471	-53.7471	-49.051	-49.051	-24.9346	-24.1143	-24.1143	-28.1249	-44.5431	-44.5431	-9.66567	-16.3493	-18.0638	-18.0638	-18.0638	-18.0638	-1.64288	19.19765	19.19765	19.19765	42.86721		
	-0.14	-46.337	-53.7471	-53.7471	-49.051	-49.051	-24.9346	-24.1143	-24.1143	-28.1249	-44.5431	-44.5431	-9.66567	-16.3493	-18.0638	-18.0638	-18.0638	-18.0638	-1.64288	19.19765	19.19765	19.19765	42.86721		
	-0.15	-46.337	-53.7471	-53.7471	-49.051	-49.051	-24.9346	-24.1143	-24.1143	-28.1249	-44.5431	-44.5431	1.84427	-5.6909	-7.62385	-7.62385	-7.62385	-7.62385	-7.62385	11.94939	11.94939	11.94939	34.19841		



DAILY PROTECT PROFITS RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	PP	5 day % Change	5/26/00	10/30/09	day
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	1.675%	2.087%	1.405%	1.333%	
Mean Return	0.027%	-0.004%	0.004%	0.014%	
Buy & Hold Return	37.156%	-45.885%	-12.155%	13.613%	
Max Buy & Hold Draw Down	-58.860%	-80.450%	-55.189%	-52.322%	
Max Draw Down Date	03/09/09	10/09/02	03/09/09	03/09/09	
Opt Sell	0.000%	2.000%	1.000%	10.000%	
Opt Buy	-1.000%	-10.000%	-4.000%	-6.000%	
Opt Return	122.524%	142.330%	81.477%	59.807%	
Opt Drawdown	-50.936%	-30.470%	-38.608%	-37.432%	
Total Trades with Opt Strategy	190	40	74	12	
Winning Sales	94	20	36	5	
Losing Sales	1	0	1	1	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	06/16/00 B	07/28/00 B	09/21/00 B	10/12/00 B
	06/19/00 S	07/31/00 S	09/22/00 S	02/01/01 S
	06/26/00 B	10/12/00 B	10/11/00 B	03/14/01 B
	06/30/00 S	10/13/00 S	10/16/00 S	05/16/01 S
	07/19/00 B	10/30/00 B	11/10/00 B	09/17/01 B
	08/28/00 S	10/31/00 S	11/14/00 S	11/13/01 S
	09/11/00 B	11/10/00 B	11/22/00 B	06/25/02 B
	09/13/00 S	11/14/00 S	11/24/00 S	10/13/03 S
	09/18/00 B	11/22/00 B	12/18/00 B	01/22/08 B
	09/25/00 S	11/24/00 S	01/03/01 S	05/02/08 S
	09/26/00 B	12/18/00 B	02/21/01 B	10/03/08 B
	09/28/00 S	01/18/01 S	02/26/01 S	10/30/09 S
	10/02/00 B	02/13/01 B	03/12/01 B	
	01/29/01 S	02/14/01 S	04/17/01 S	
	02/05/01 B	02/22/01 B	05/30/01 B	
	02/07/01 S	02/26/01 S	06/01/01 S	





WEEKLY PROTECT PROFITS RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	PP	4 week % Change	6/10/00	10/30/09	week
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	3.314%	3.976%	2.709%	2.618%	
Mean Return	0.104%	-0.074%	0.005%	0.058%	
Buy & Hold Return	26.584%	-52.898%	-14.622%	12.233%	
Max Buy & Hold Draw Down	-57.895%	-80.170%	-54.614%	-51.395%	
Max Draw Down Date	03/02/09	09/30/02	03/02/09	03/02/09	
Opt Sell	9.000%	13.000%	8.000%	9.000%	
Opt Buy	-10.000%	-7.000%	-10.000%	-10.000%	
Opt Return	99.313%	-41.224%	66.759%	96.051%	
Opt Drawdown	-58.821%	-78.472%	-54.354%	-52.322%	
Total Trades with Opt Strategy	16	4	14	14	
Winning Sales	7	1	6	7	
Losing Sales	1	1	1	0	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	11/27/00 B	07/24/00 B	03/12/01 B	09/10/01 B
	01/22/01 S	08/28/00 S	04/16/01 S	10/01/01 S
	03/12/01 B	09/25/00 B	09/10/01 B	07/15/02 B
	04/23/01 S	10/26/09 S	10/01/01 S	08/05/02 S
	09/10/01 B		07/15/02 B	09/23/02 B
	10/08/01 S		08/12/02 S	10/21/02 S
	07/08/02 B		09/16/02 B	02/03/03 B
	06/02/03 S		11/11/02 S	04/28/03 S
	07/30/07 B		02/03/03 B	01/14/08 B
	10/01/07 S		04/21/03 S	04/28/08 S
	01/14/08 B		01/14/08 B	10/06/08 B
	05/12/08 S		05/12/08 S	10/27/08 S
	06/30/08 B		09/29/08 B	01/26/09 B
	08/04/08 S		10/26/09 S	06/01/09 S
	09/29/08 B			
	10/26/09 S			





MONTHLY PROTECT PROFITS RESULTS

	Sell Method	Buy Method	Start Date	Stop Date	Period
	PP	1 month % Change	6/10/00	10/30/09	month
Ticker	IWM	QQQQ	SPY	DIA	
Std Dev in Period	5.992%	8.288%	4.641%	4.453%	
Mean Return	0.388%	-0.355%	-0.060%	0.184%	
Buy & Hold Return	25.894%	-54.925%	-17.227%	9.849%	
Max Buy & Hold Draw Down	-52.723%	-79.612%	-50.782%	-47.527%	
Max Draw Down Date	02/02/09	09/03/02	02/02/09	02/02/09	
Opt Sell	6.000%	0.000%	19.000%	17.000%	
Opt Buy	7.000%	-4.000%	7.000%	6.000%	
Opt Return	115.909%	-46.083%	56.937%	53.500%	
Opt Drawdown	-58.821%	-78.472%	-54.354%	-52.322%	
Total Trades with Opt Strategy	16	4	4	4	
Winning Sales	8	1	2	2	
Losing Sales	0	1	0	0	

Transaction Dates and Types	IWM	QQQQ	SPY	DIA
	12/01/00 B	07/03/00 B	04/02/01 B	08/01/00 B
	06/01/01 S	08/01/00 S	11/01/06 S	10/02/06 S
	11/01/01 B	09/01/00 B	03/02/09 B	03/02/09 B
	04/01/02 S	10/01/09 S	08/03/09 S	08/03/09 S
	11/01/02 B			
	06/02/03 S			
	10/01/03 B			
	01/02/04 S			
	11/01/04 B			
	07/01/05 S			
	01/03/06 B			
	10/02/06 S			
	03/02/09 B			
	05/01/09 S			
	07/01/09 B			
	09/01/09 S			





A HAND CALCULATION METHOD

- In spite of the fact that distributions in security returns are rarely described by standard statistics, the standard deviation (sigma) of returns can be legitimately used to set trailing stops.
- This is because the relatively small random fluctuations seen in day-to-day returns are well described by a standard deviation. What you really want to know is if something is going on that is *not* well described. Exceeding a stop says that something is going on that is not random, and that's when you want to get out.
- Excel makes it very quick and easy to calculate the standard deviation of returns (better known as “sigma”). A 3 sigma change has 1 chance in 370 of being random, and usually signals the start of a significant price move.

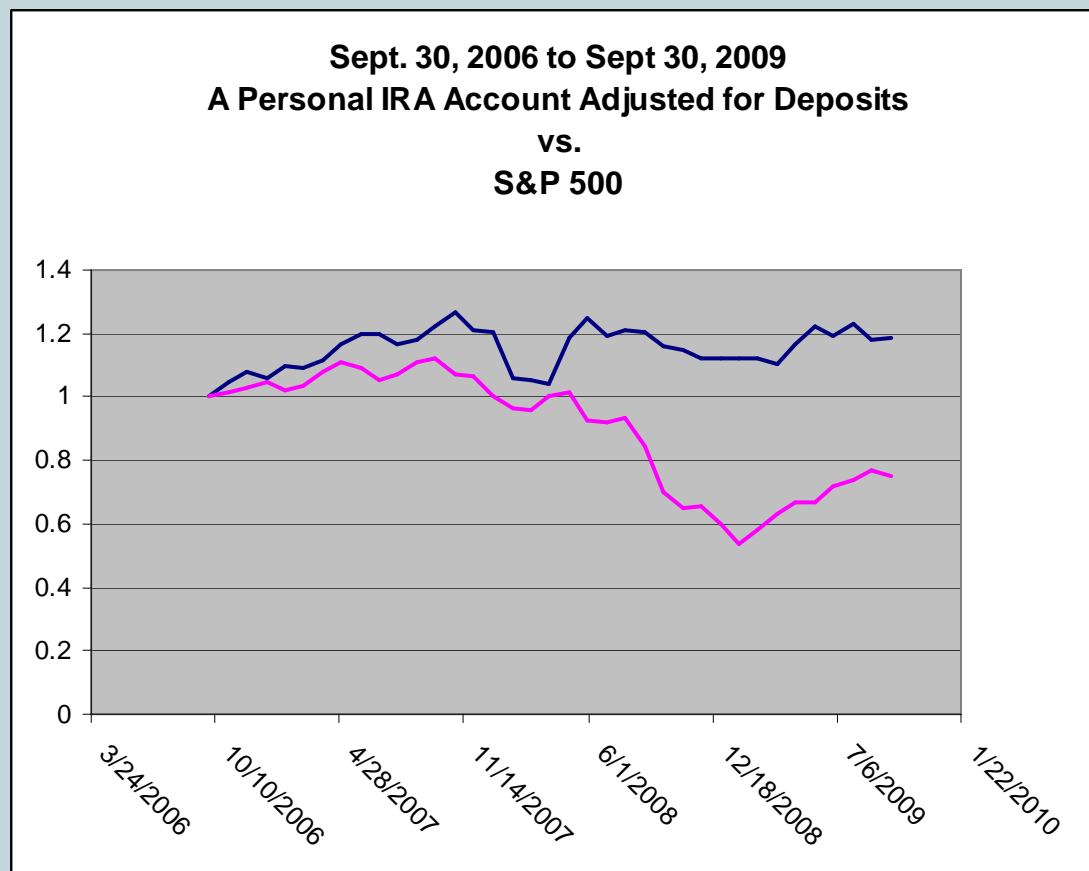


REAL RESULTS

- **THE RESULTS SHOWN HERE USED SIMILAR TECHNIQUES, BUT WERE NOT NEARLY AS AUTOMATED AS THIS PROGRAM ALLOWS**
- **TRAILING STOP CALCULATIONS WERE MADE USING THE SAME DAILY DATA FROM YAHOO, BUT USUALLY USED 3 SIGMA STOPS. PROFIT PROTECTION WAS NOT USED.**
- **THEY ALSO USED ALERT STOPS CALCULATED AT A DROP OF 2 STANDARD DEVIATIONS IN DAILY RETURNS**
- **RETURNS WERE MOSTLY MONITORED DAILY WHEN IN THE MARKET, LESS FREQUENTLY WHEN OUT**
- **STOPS WERE CALCULATED ON AN INDIVIDUAL EQUITY BASIS AND DECISIONS TO SELL MADE ON AN INDIVIDUAL BASIS**
- **OVER THE SAME TIME PERIOD, HOLDING A TEN-YEAR TREASURY BOND WOULD HAVE PRODUCED A 5.59% RETURN.**



RESULTS ON A PERSONAL IRA



	IRA	S&P 500
Total Return to Date	18.32%	-24.80%
Annualized Return	5.77%	-9.06%
Maximum Drawdown	-18.17%	-52.56%