Active Asset Allocation Models for ETF Investors

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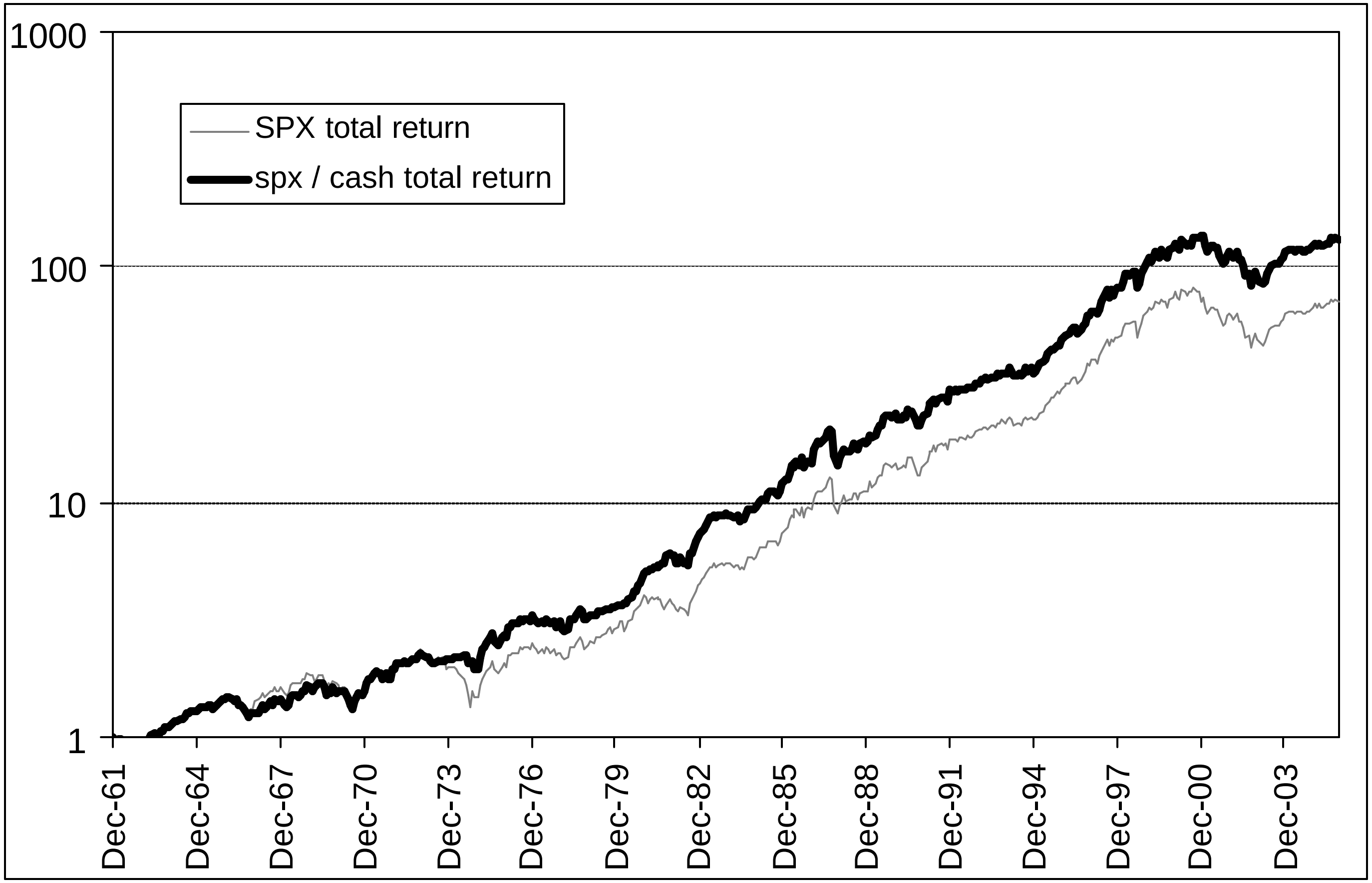
Summary

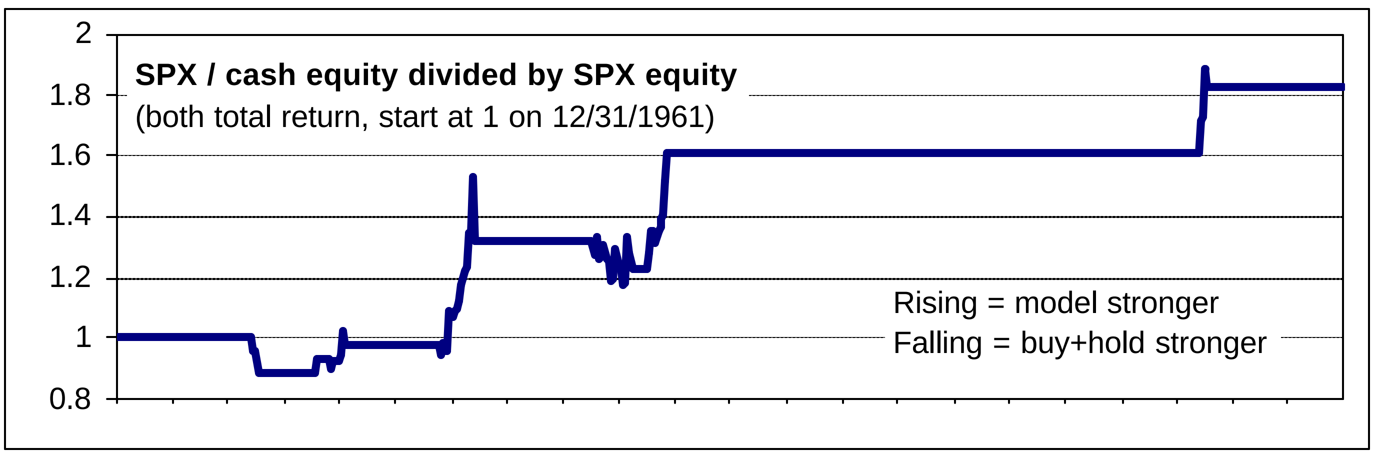
- Yield curve model for stocks versus cash
- Small versus large cap allocation model
- U.S. versus foreign stock allocation model
- Growth versus value allocation model

Yield curve filter for S&P 500

- Compare 10-year yields (Treasury notes) and 90-day yields (Treasury bills) on the last day of each month, available on Federal Reserve web site.
- Be in cash whenever the T-bill yield exceeds the 10-year yield
- Be in S&P 500 (SPY) otherwise

Performance of the yield curve filter with the S&P 500 index, 1962-2005





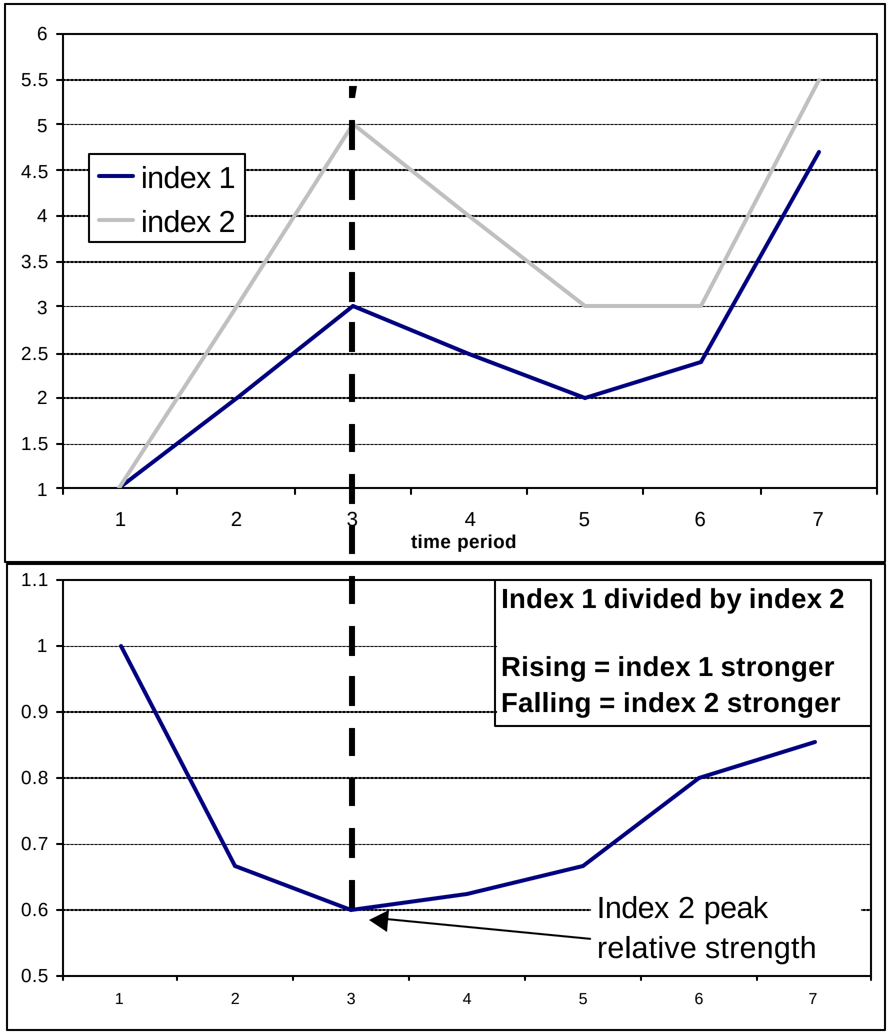
Results of yield curve filter 1962-2005

- The yield curve filter kicked in 9 times
- In the S&P 500 91% of the time, in T-bills 9% of the time
- During the period the S&P 500 returned 10.2%/year with 45% drawdown (monthly data), compared to 11.7% return with 39% drawdown using the yield curve filter.

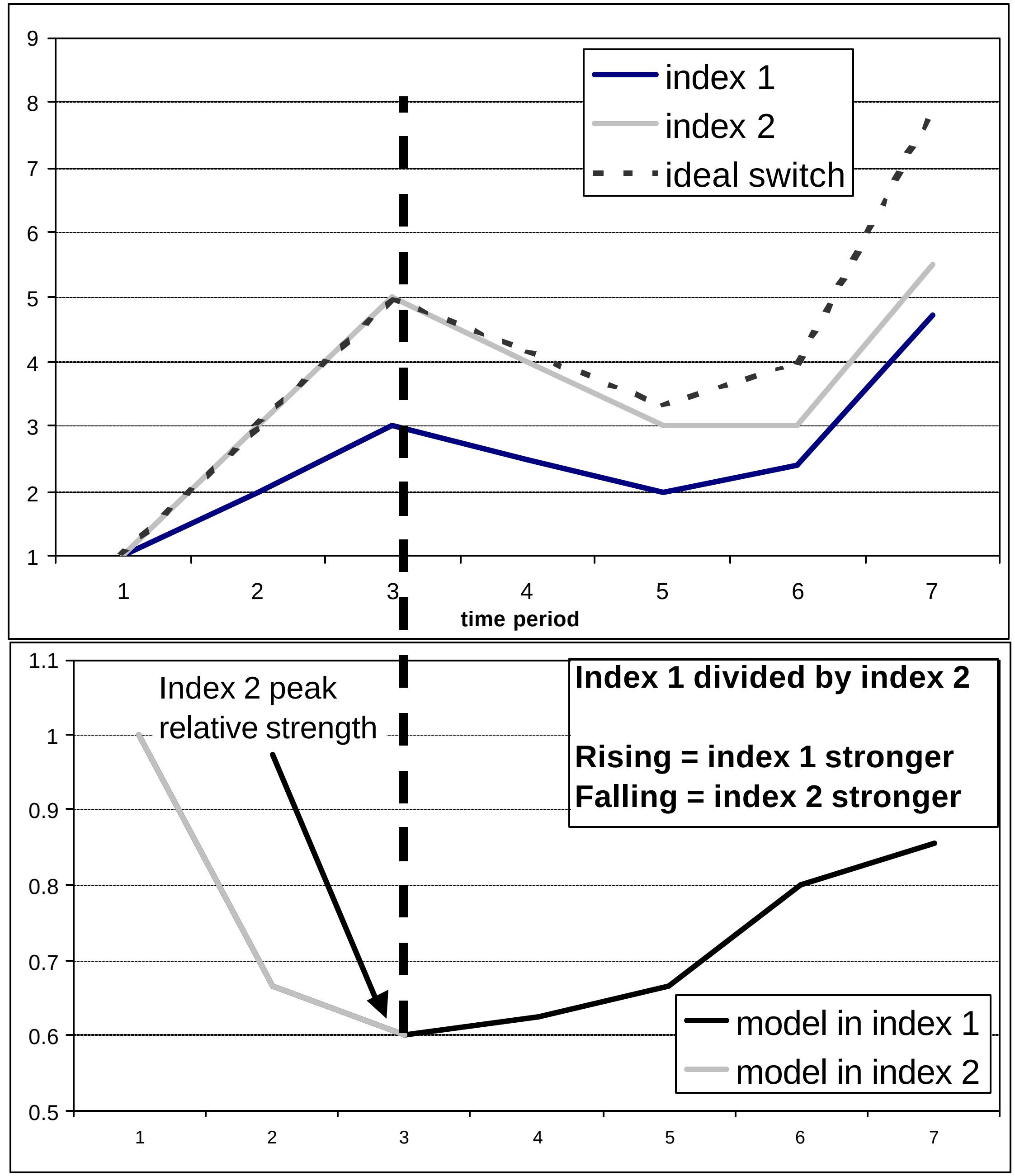
Yield curve filter in effect		While yield curve filter in effect	
from	to	SPX returned	T-bills returned
Sep-66	Feb-67	15.1%	2.4%
Jan-69	Feb-69	**-5.0%**	**0.5%**
Jul-69	Sep-69	**-3.9%**	**1.1%**
Nov-69	Feb-70	**-6.8%**	**2.0%**
Jun-73	Jul-74	**-21.2%**	**8.7%**
Aug-74	Oct-74	**-5.6%**	**1.8%**
Dec-78	May-80	27.6%	16.5%
Nov-80	Sep-81	**-4.6%**	**12.7%**
Aug-00	Jan-01	**-4.0%**	**2.8%**

Concept of relative strength

- Divide index_1 by index_2. These indexes may reflect price or total return.
- Rising ratio means index_1 (numerator) is stronger.
- Falling ratio means index_2 (denominator) is stronger.
- Relative strength leadership does not tell you whether either or both indexes are showing profits or losses.

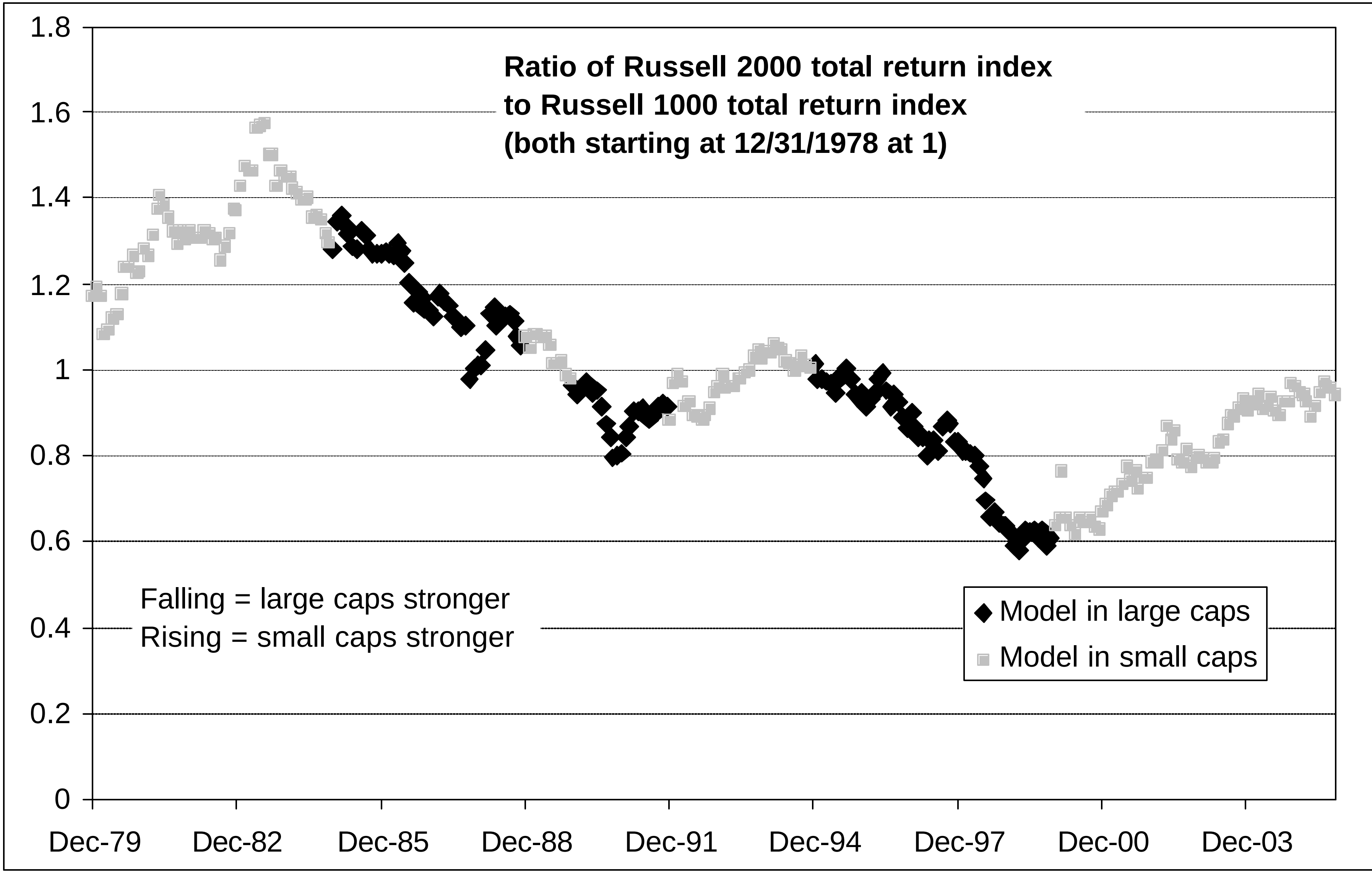


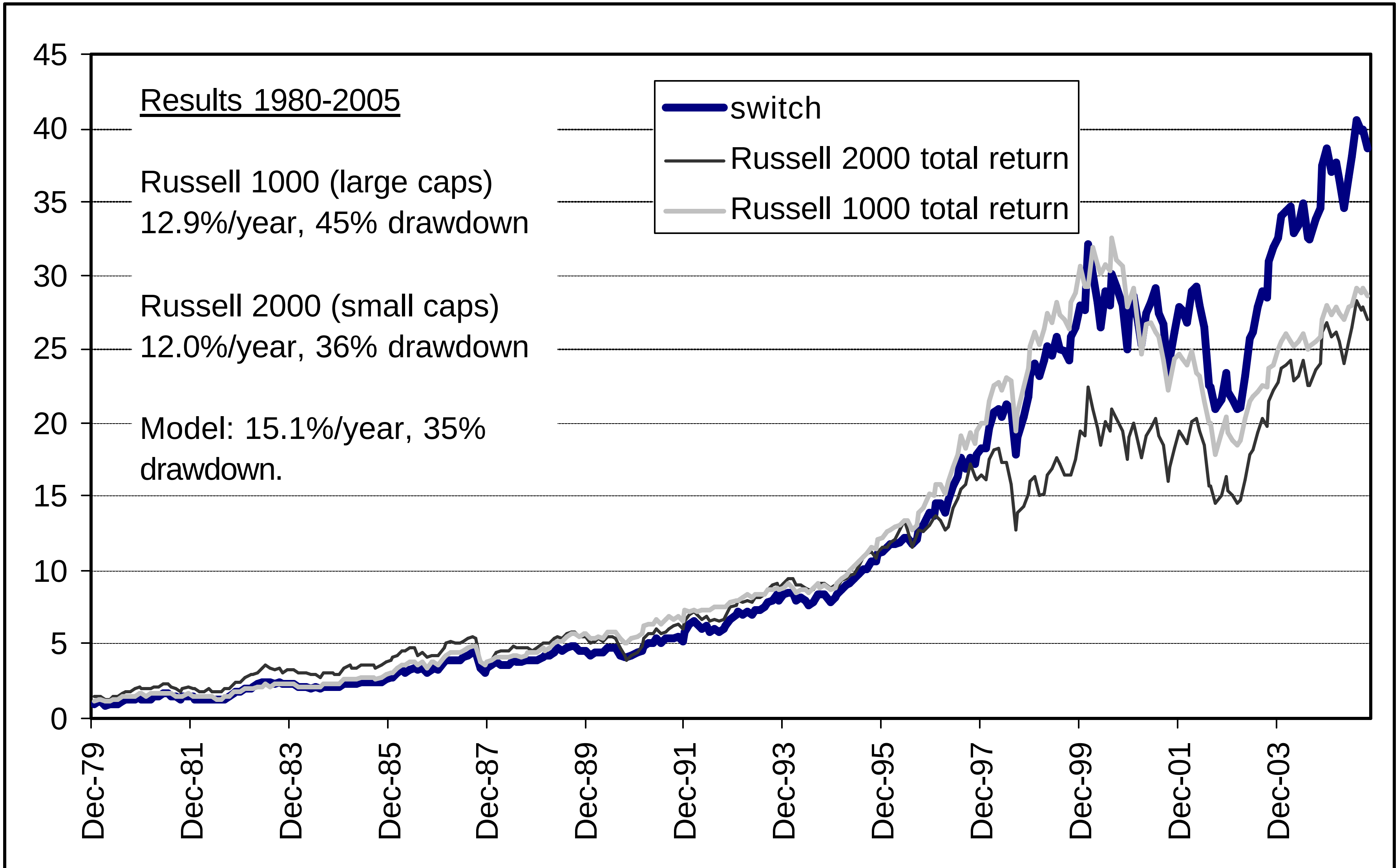
Hypothetical ideal relative strength switching model



Small cap vs. large cap (blend)

- On the last trading day of each year see whether the small or the large cap benchmark had the greater total return.
- For the coming year, invest in whichever style was more profitable during the previous year.
- Can implement using mutual fund averages (Lipper) or Russell 1000/Russell 2000 ETF's.


Ratio of Russell 2000 total return index
to Russell 1000 total return index
(both starting at 12/31/1978 at 1)
Falling = large caps stronger
Rising = small caps stronger
Model in large caps
Model in small caps
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
Dec-79
Dec-82
Dec-85
Dec-88
Dec-91
Dec-94
Dec-97
Dec-00
Dec-03



Results 1980-2005
Russell 1000 (large caps)
12.9%/year, 45% drawdown
Russell 2000 (small caps)
12.0%/year, 36% drawdown
Model: 15.1%/year, 35%
drawdown.
switch
Russell 2000 total return
Russell 1000 total return
45
40
35
30
25
20
15
10
5
0
Dec-79
Dec-81
Dec-83
Dec-85
Dec-87
Dec-89
Dec-91
Dec-93
Dec-95
Dec-97
Dec-99
Dec-01
Dec-03

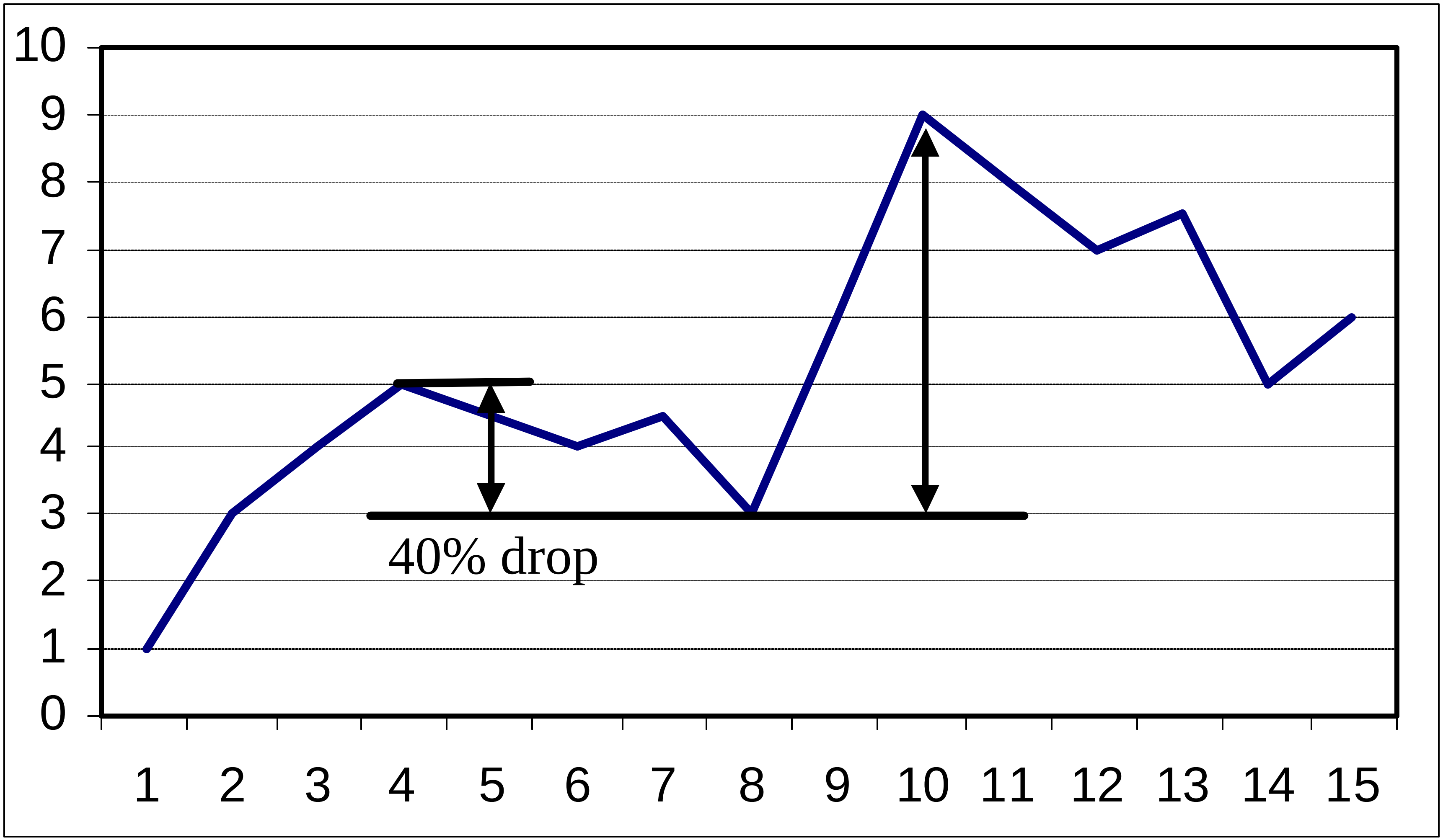
model in small caps

from	to	large cap total return	**small cap total return**
12/31/79	12/31/84	92.6%	**111.5%**
12/31/88	12/31/89	30.4%	**16.3%**
12/31/91	12/31/94	20.5%	**38.2%**
12/31/99	open trade	-6.4%	**37.9%**
	as of 10/31/2005		

model in large caps

from	to	**large cap total return**	small cap total return
12/31/84	12/31/88	**88.2%**	57.9%
12/31/89	12/31/91	**27.4%**	17.6%
12/31/94	12/31/99	**244.2%**	116.4%

Recognizing new trends in relative strength

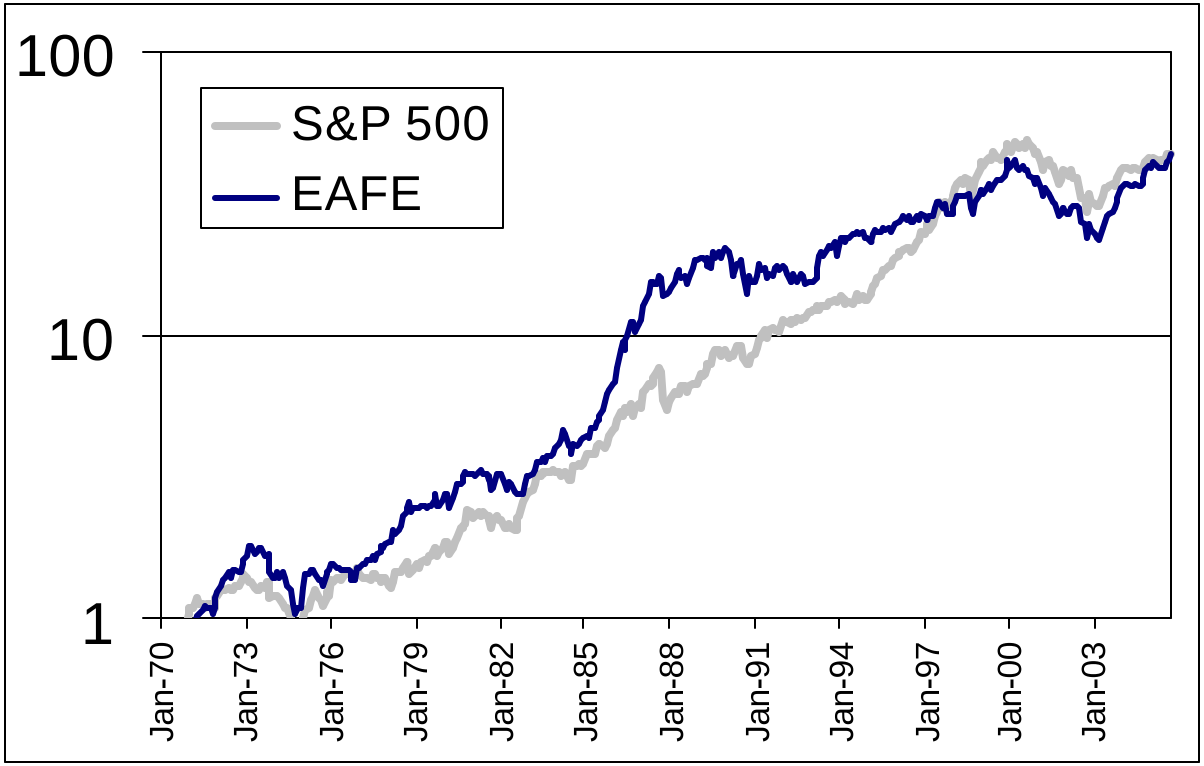


Foreign versus U.S. stock model

- Use MSCI EAFE as the benchmark for foreign stocks and S&P 500 as the U.S. benchmark.
- Calculate the ratio of EAFE / S&P 500 (price-only data) on the last day of each month.
- A new trend is defined by a 15% reversal in relative strength.

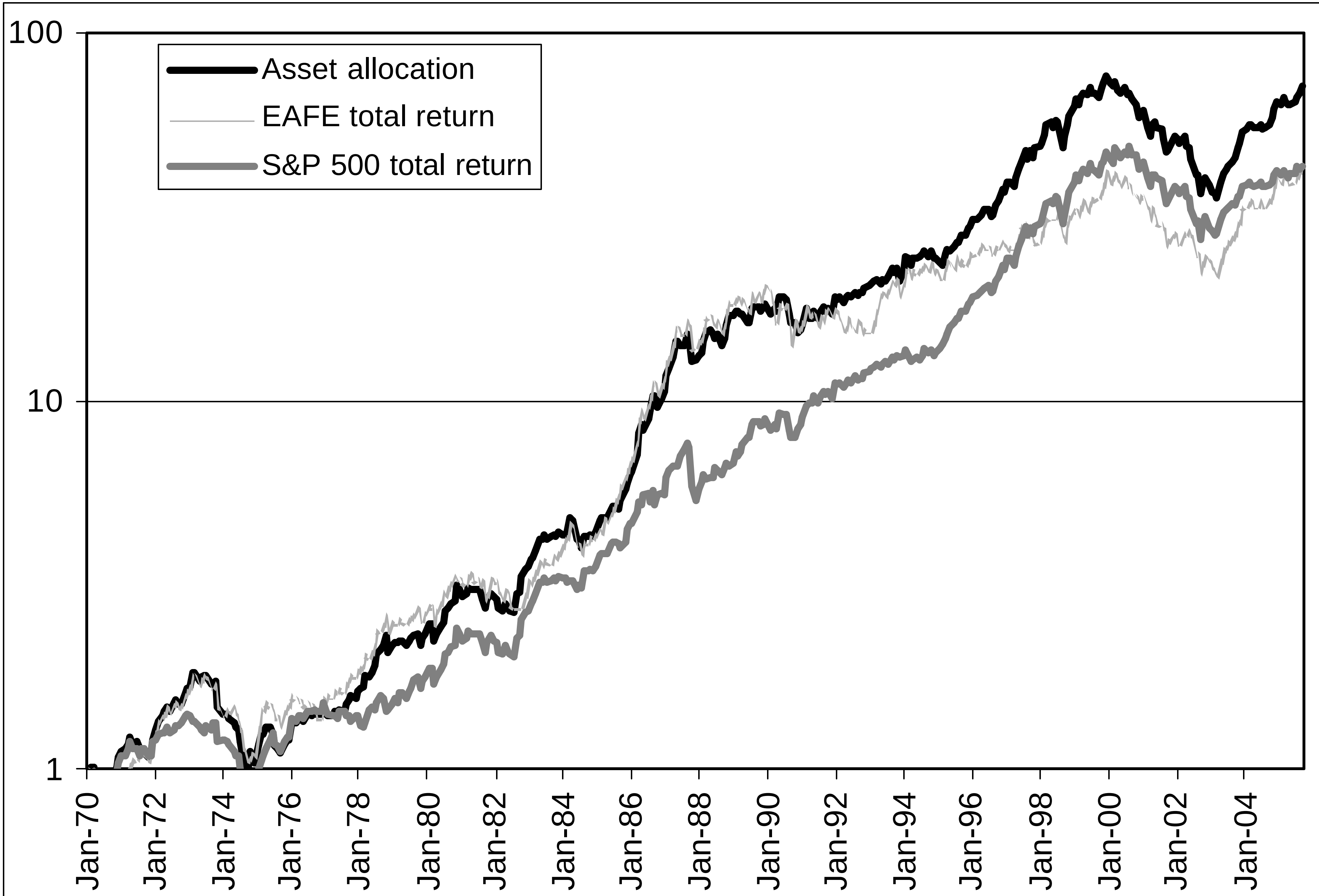
Total return on EAFE and S&P 500 indexes, starting at $1 on 12/31/1969.

(log scale)



EAFE / S&P 500 (ratio of total returns above)

Note the huge variations in relative performance, 1985-1999


100
10
1
Asset allocation
EAFE total return
S&P 500 total return
Jan-70
Jan-72
Jan-74
Jan-76
Jan-78
Jan-80
Jan-82
Jan-84
Jan-86
Jan-88
Jan-90
Jan-92
Jan-94
Jan-96
Jan-98
Jan-00
Jan-02
Jan-04

Results of EAFE vs SPX model

- 17 one-way switches from 1970-2005
- EAFE and S&P 500 total returns during the period were both 10.8%/year, with drawdowns of 47% and 45%, respectively (based on monthly data)
- Switching according to the model returned 12.4%/year, but with 53% drawdown.
- Of the 17 transactions, 9 have been successful. The gains have been greater than the losses.

Trade-by-trade results: EAFE vs. SPX momentum model

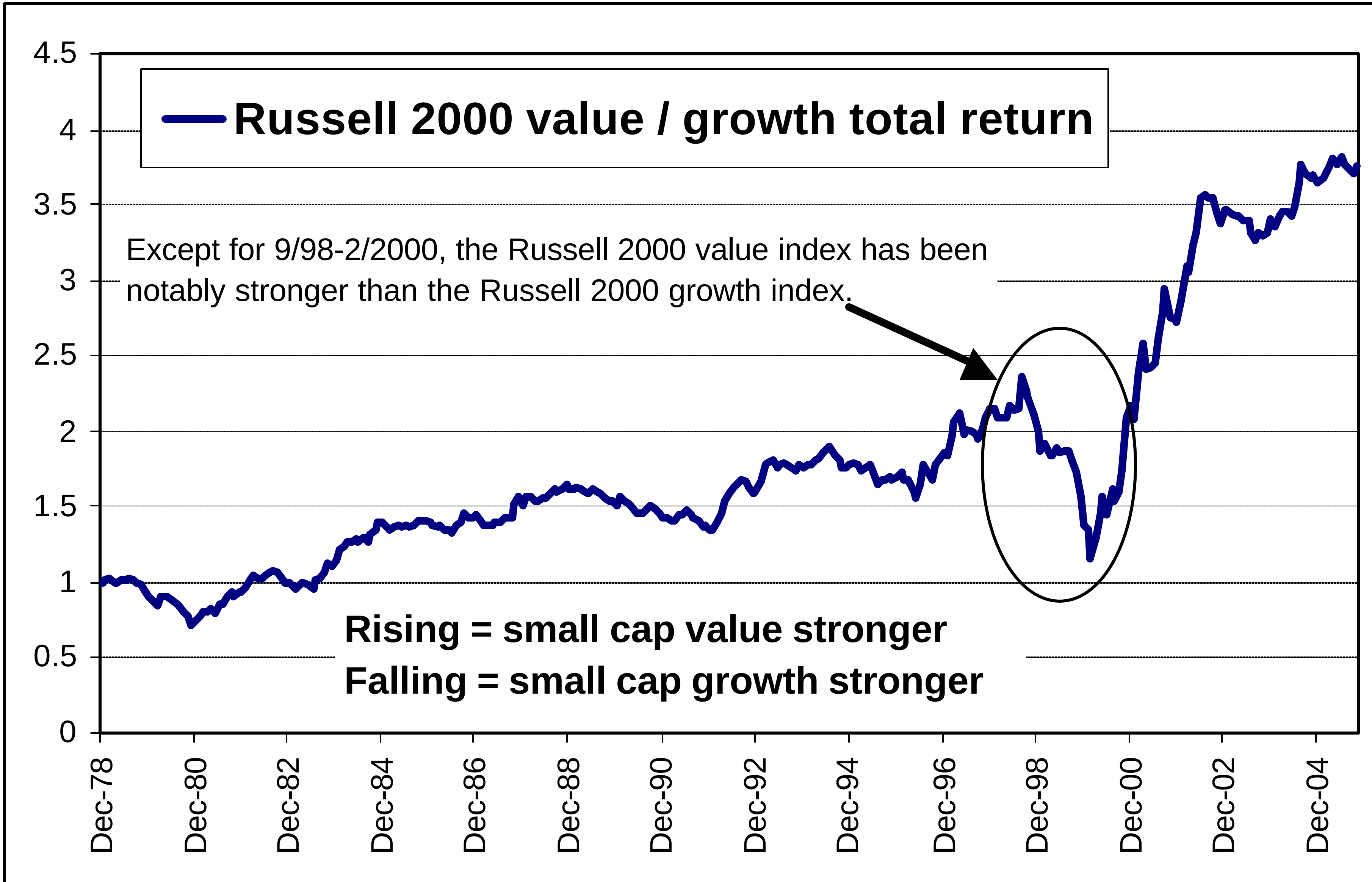
Model favored EAFE		While model favored EAFE		
from	to	EAFE gained	S&P gained	comment
Jul-71	Dec-73	25.0%	9.9%	successful
Feb-75	Jun-75	-1.1%	18.3%	unsuccessful
Feb-77	Aug-79	66.5%	24.8%	successful
Jan-84	Aug-84	-0.9%	4.9%	unsuccessful
Mar-85	May-89	434.5%	148.3%	successful
Oct-90	Mar-91	2.9%	25.3%	unsuccessful
Apr-93	May-95	22.4%	28.6%	unsuccessful
Feb-00	Oct-00	-10.3%	5.4%	unsuccessful
Jun-02	Sep-05	57.3%	31.5%	successful (open position as of 10/31/2005)

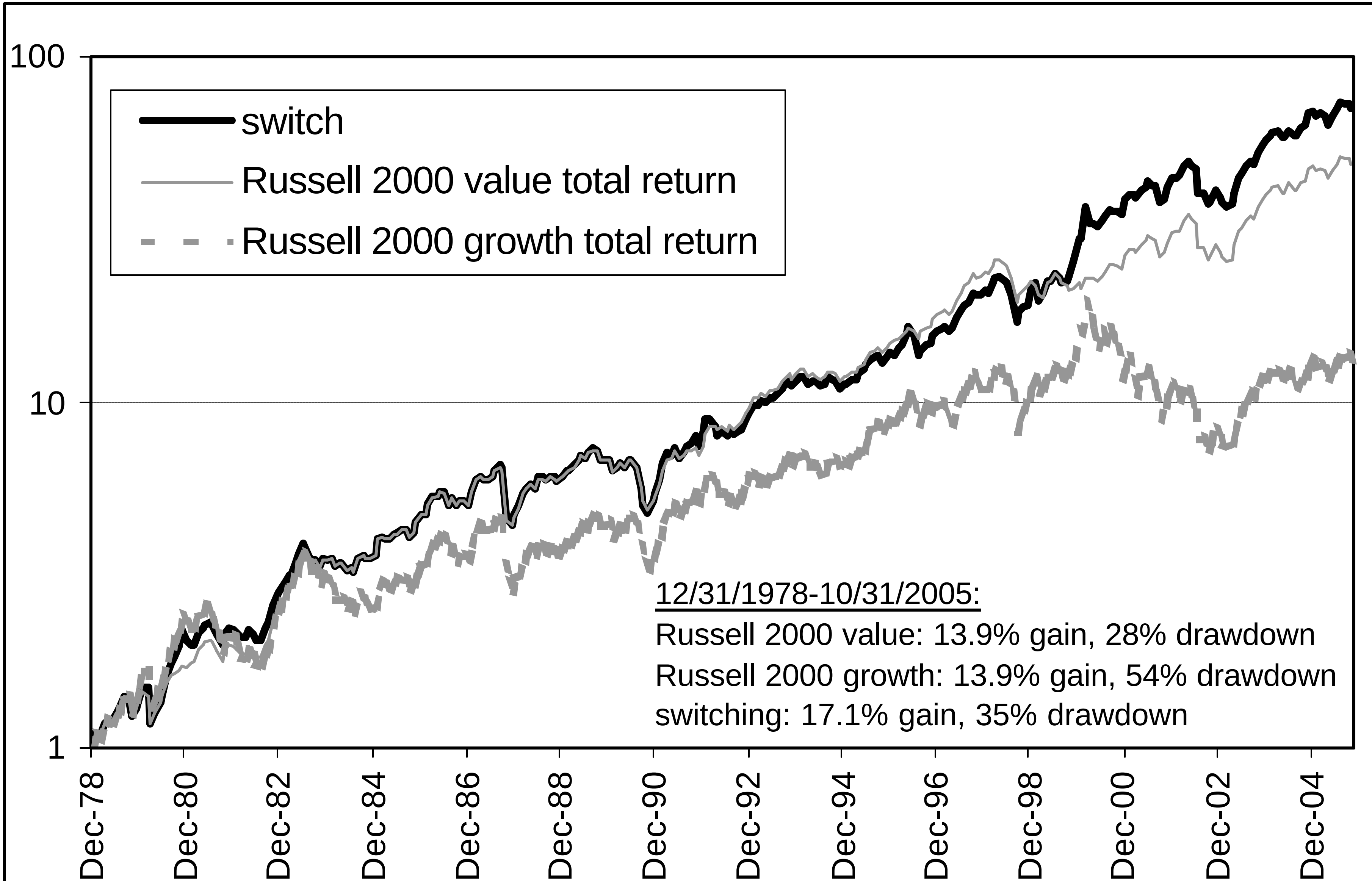
Model favored S&P 500		While model favored S&P 500		
from	to	EAFE gain	S&P gain	comment
Dec-73	Feb-75	3.9%	-11.8%	unsuccessful
Jun-75	Feb-77	9.5%	12.1%	successful
Aug-79	Jan-84	60.0%	87.7%	successful
Aug-84	Mar-85	25.2%	21.5%	unsuccessful
May-89	Oct-90	-7.2%	-0.5%	successful
Mar-91	Apr-93	13.2%	24.8%	successful
May-95	Feb-00	70.6%	178.4%	successful
Oct-00	Jun-02	-22.5%	-29.1%	unsuccessful

Growth versus value model

- Select value and growth benchmarks for either large or small caps (eg: Russell 2000 value and growth indexes)
- Calculate the monthly total return indexes and find the ratio as of the last day of each month.
- Look for 10% reversals in the ratio to define new long term trends.

Small cap growth indexes have been generally weak compared to small cap growth mutual funds.




100
10
1
switch
Russell 2000 value total return
Russell 2000 growth total return
12/31/1978-10/31/2005:
Russell 2000 value: 13.9% gain, 28% drawdown
Russell 2000 growth: 13.9% gain, 54% drawdown
switching: 17.1% gain, 35% drawdown
Dec-78
Dec-80
Dec-82
Dec-84
Dec-86
Dec-88
Dec-90
Dec-92
Dec-94
Dec-96
Dec-98
Dec-00
Dec-02
Dec-04

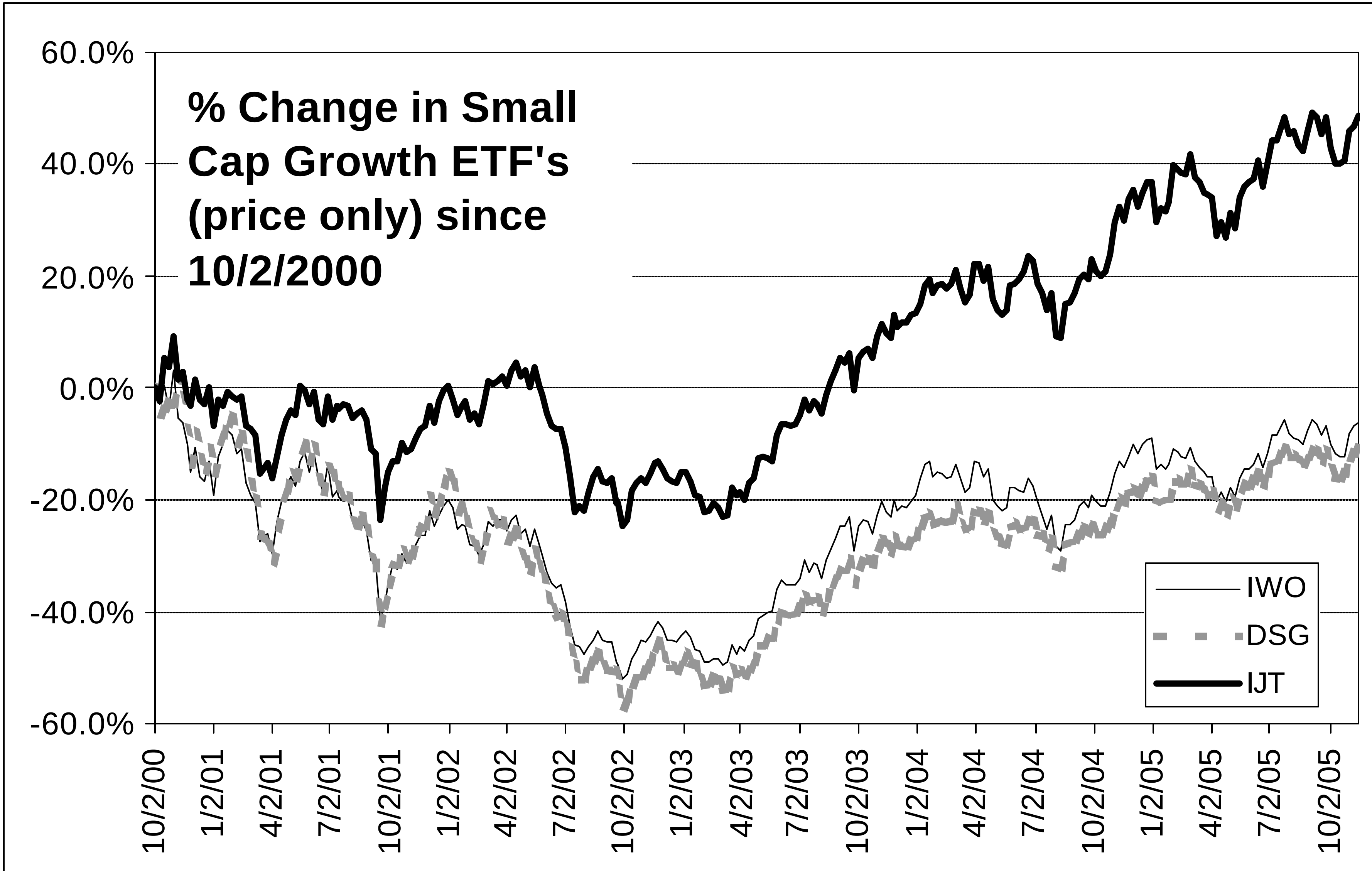
Results of 10% reversal on ratio of Russell 2000 value to Russell 2000 growth total return indexes.

		growth	value
While model in value		**change**	**change**
Feb-81	Feb-83	33.4%	**58.2%**
Sep-83	May-90	40.6%	**93.7%**
Apr-92	Jul-95	54.0%	**66.1%**
Jul-96	Nov-98	18.7%	**41.0%**
Mar-00	10/31/05	-24.7%	**116.3%**

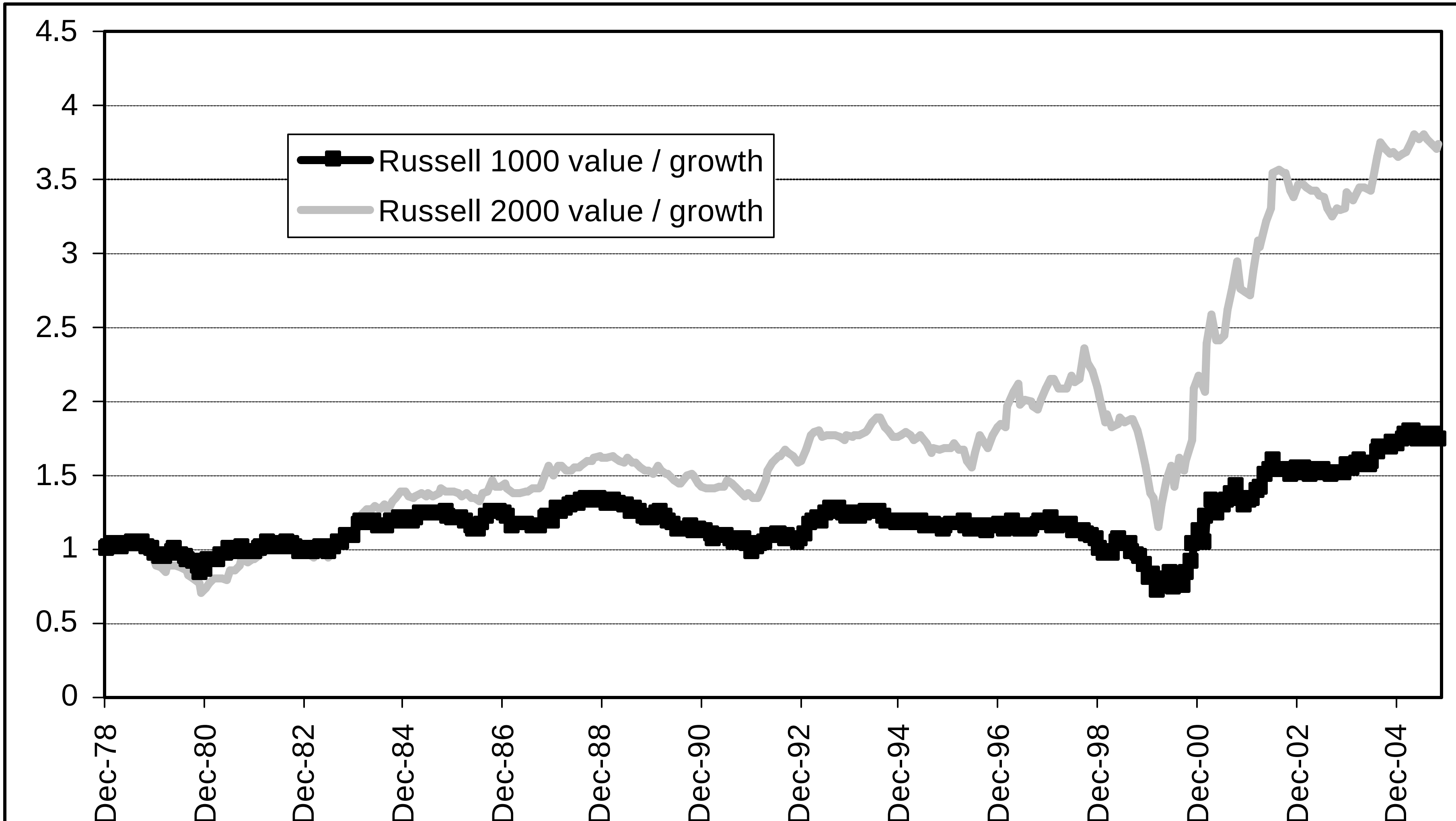
During this period it was difficult to make a good decision to be in growth over value.

		growth	value
While model in growth		**change**	**change**
Dec-78	Feb-81	**120.8%**	77.4%
Feb-83	Sep-83	11.3%	**23.8%**
May-90	Apr-92	17.5%	**23.3%**
Jul-95	Jul-96	3.0%	**10.6%**
Nov-98	Mar-00	**70.5%**	5.5%

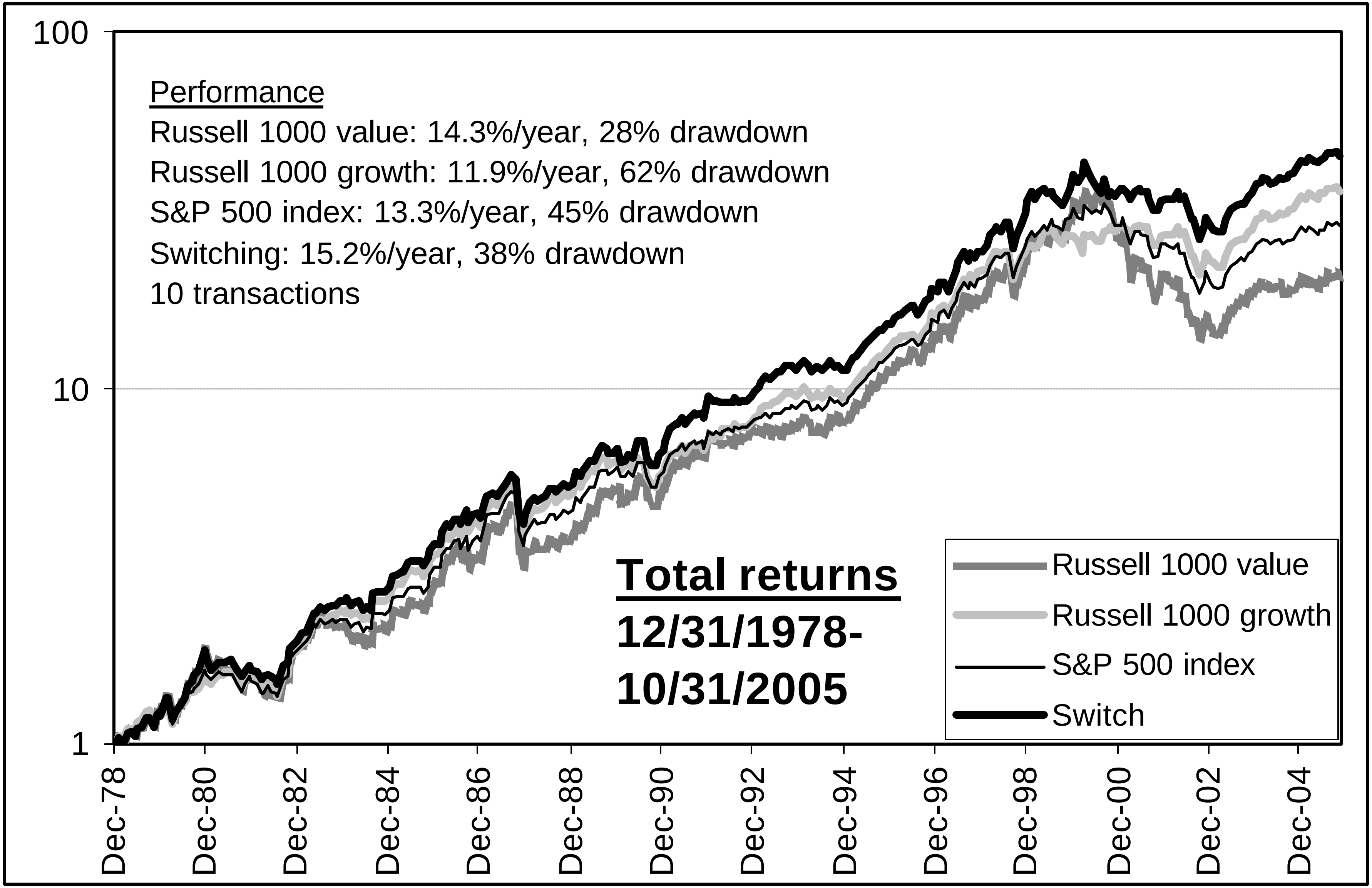
The S&P 600 Growth Index fared better than other small cap growth benchmarks (and better than small cap growth mutual funds) from 2000-2002.



Compared to the swings between small cap growth and value, the disparities between large cap growth and value have been much smaller, and therefore less profitable to attempt to trade.



Asset allocation model on large cap value versus growth, 1979-2005



Model in value		Total return (% gain/loss) in: RU 1000 growth	RU 1000 value	S&P 500	
from	to				
Mar-81	Nov-89	202.1%	**291.2%**	266.0%	successful
Apr-92	Oct-95	51.9%	**60.1%**	54.6%	successful
May-99	Oct-99	**10.9%**	-1.8%	5.2%	unsuccessful
May-00	Jun-00	**7.6%**	-4.6%	2.5%	unsuccessful
Sep-00	10/31/05	-37.0%	**28.9%**	-8.8%	successful

Results of 10% reversal on relative strength between Russell 1000 value and growth total return indexes.

model in growth		Total return (% gain/loss) in: ru1000 growth	ru 1000 value	S&P 500	
from	to				
Dec-78	Mar-81	**68.4%**	57.5%	59.3%	successful
Nov-89	Apr-92	**37.5%**	23.4%	29.8%	successful
Oct-95	May-99	**140.3%**	124.6%	138.8%	successful
Oct-99	May-00	**12.7%**	0.0%	5.0%	successful
Jun-00	Sep-00	-5.4%	**7.9%**	-1.0%	unsuccessful

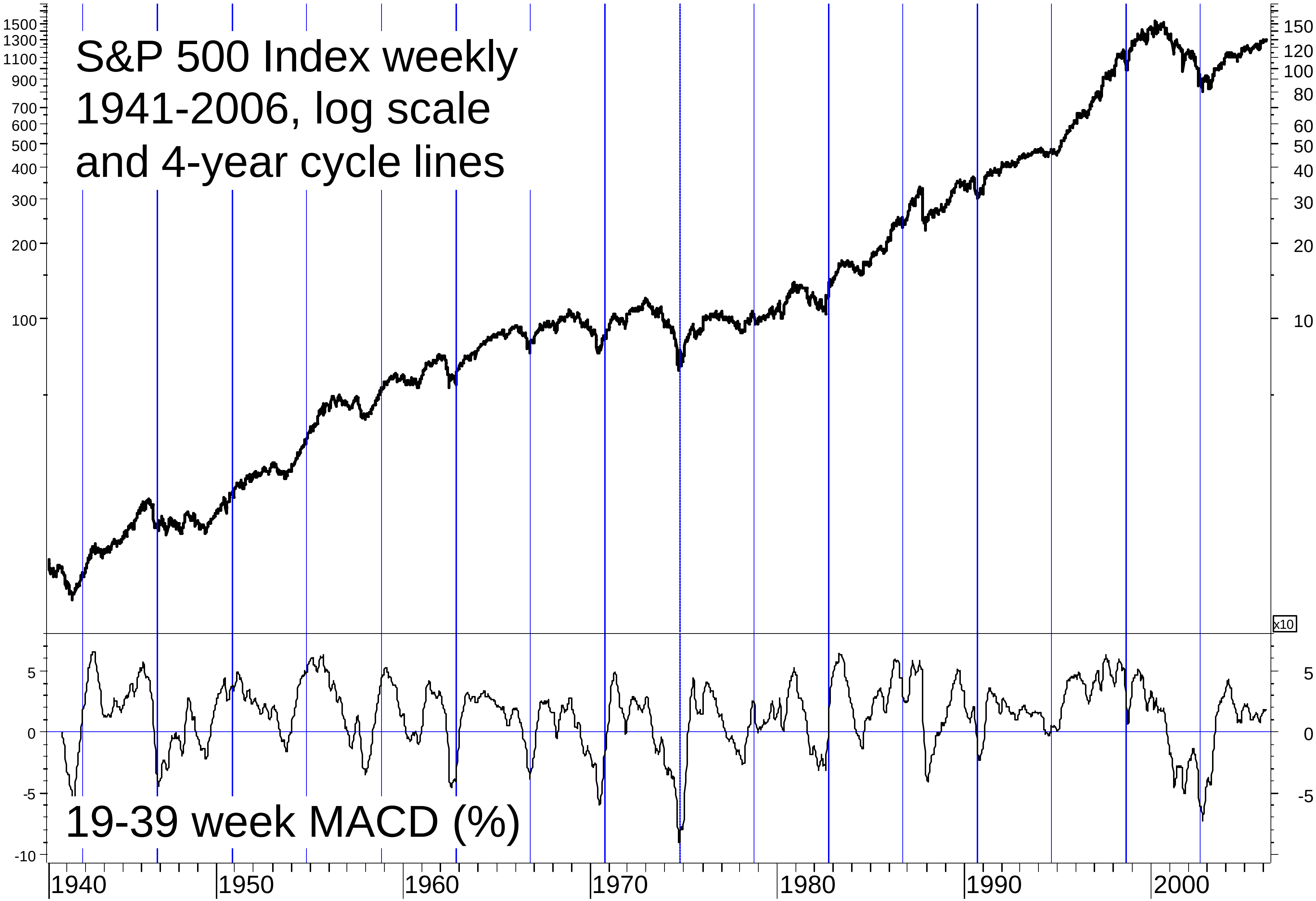
Conclusions

- Simple momentum strategies would have kept you on the right side of major market trends.
- These strategies can be implemented at low cost with available ETF's.
- These strategies would have been more profitable than buy and hold strategies but in most cases would not have reduced risk compared to buying and holding the safer investment.
- Therefore, I recommend using this type of model in conjunction with other risk-reducing strategies.

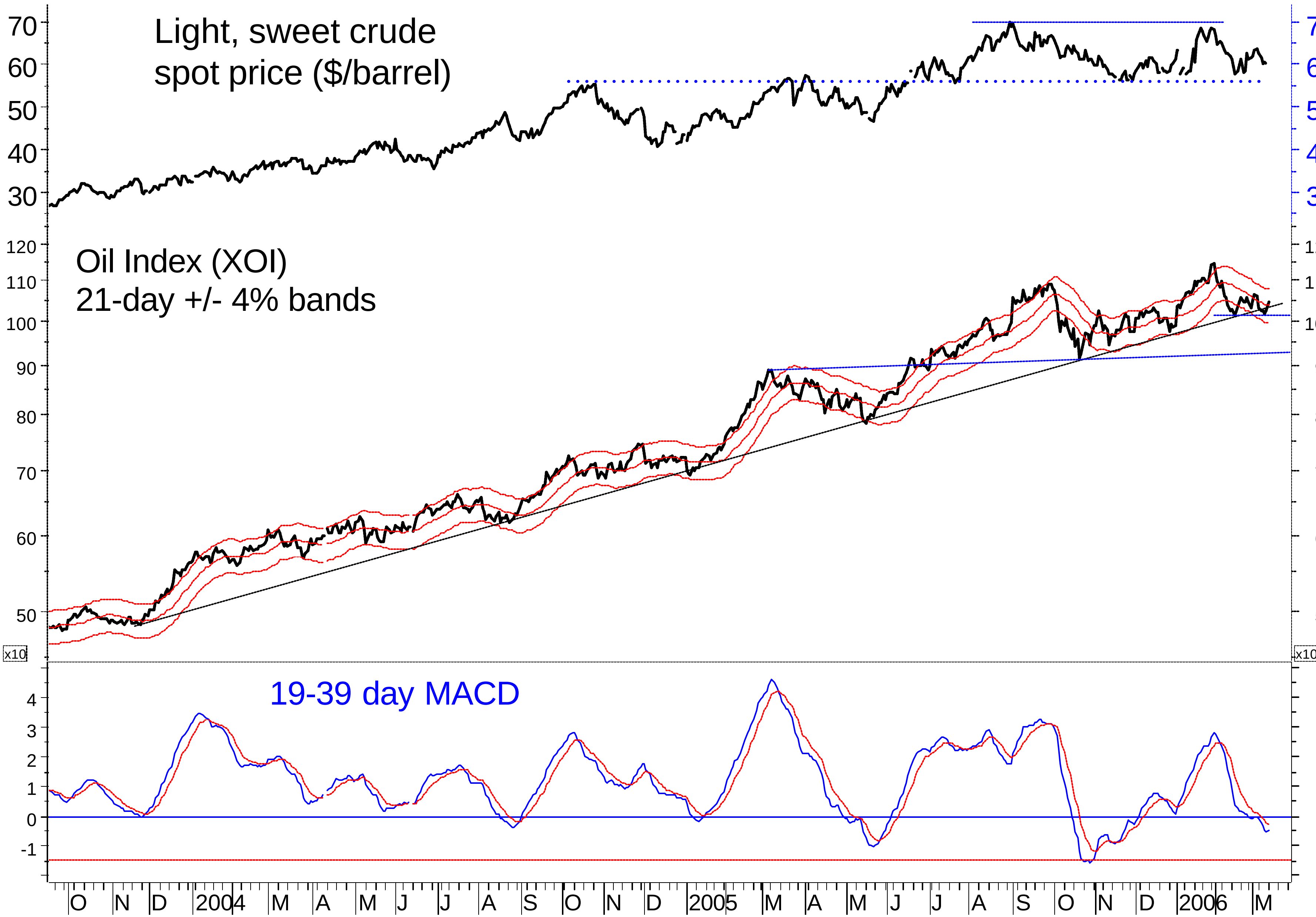
2006 Market Outlook—Considerations from technical analysis

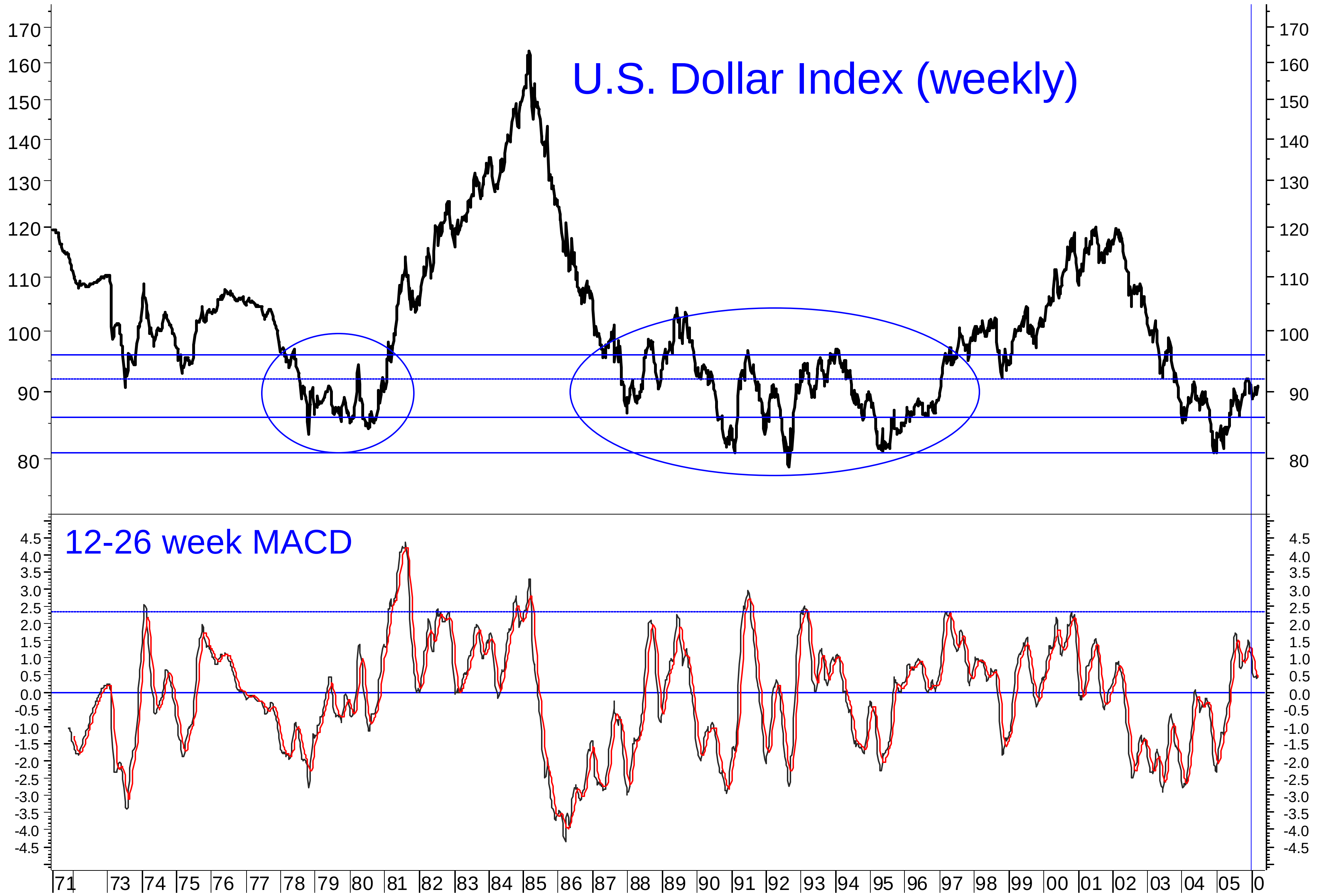
- Interest rates will drift higher
- Relatively mild market correction, start of rally in fourth quarter (election cycle)
- Energy will enter a trading range
- Foreign stocks will lose relative strength
- The warning sign will be an end to the trend towards lower volatility.
- Large cap growth (non-tech) looks attractive.


BAA Long Term Bond Yields
(%) weekly
19-39 week MACD
17
16
15
14
13
12
11
10
9
8
7
6
5
0
-5
1960
1970
1980
1990
2000

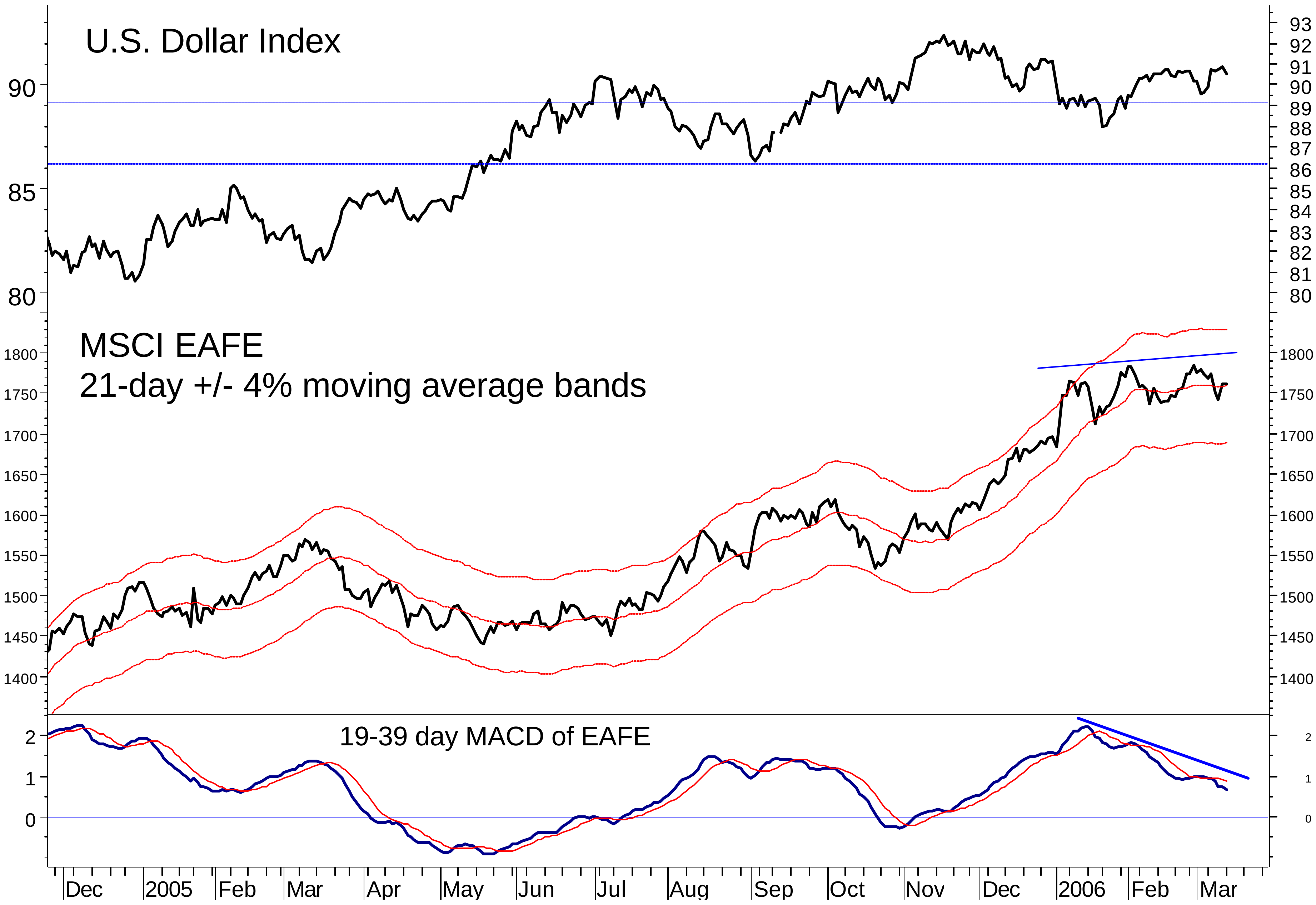

S&P 500 Index weekly
1941-2006, log scale
and 4-year cycle lines
19-39 week MACD (%)
1500
1300
1100
900
700
600
500
400
300
200
100
150
120
100
80
60
50
40
30
20
10
x10
5
0
-5
-10
1940
1950
1960
1970
1980
1990
2000

S&P 500 index
21-day average
+/- 3% bands
19-39 day MACD
1310
1300
1290
1280
1270
1260
1250
1240
1230
1220
1210
1200
1190
1180
1170
1160
1150
1140
1130
1120
1110
1100
1090
1.5
1.0
0.5
0.0
-0.5
-1.0
Nov
Dec
2005
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2006
Feb
Mar

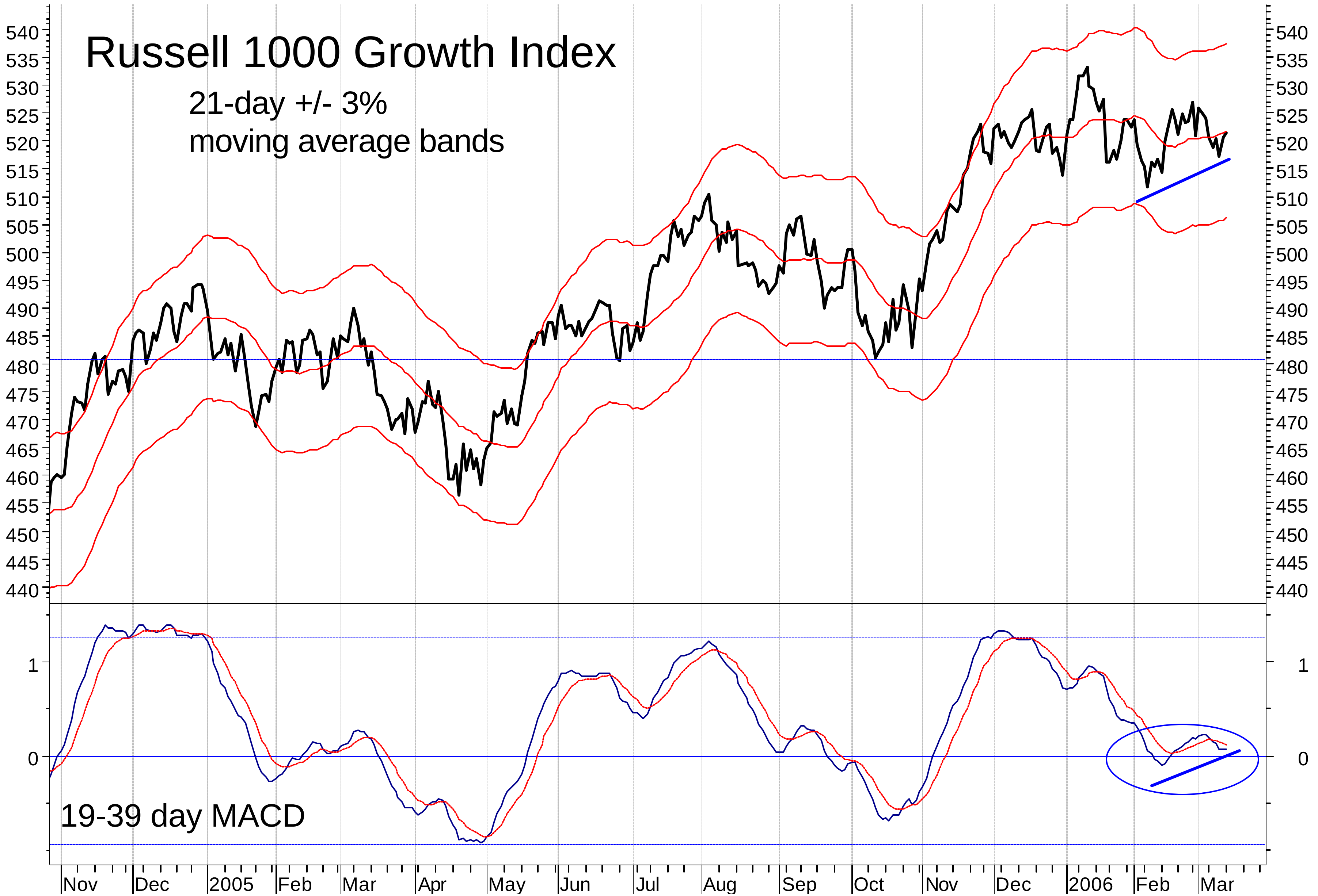

Light, sweet crude
spot price ($/barrel)
Oil Index (XOI)
21-day +/- 4% bands
19-39 day MACD
x10
O N D 2004 M A M J J A S O N D 2005 M A M J J A S O N D 2006 M



U.S. Dollar Index (weekly)
12-26 week MACD
170
160
150
140
130
120
110
100
90
80
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
-0.5
-1.0
-1.5
-2.0
-2.5
-3.0
-3.5
-4.0
-4.5
71
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
00
01
02
03
04
05
0


U.S. Dollar Index
MSCI EAFE
21-day +/- 4% moving average bands
19-39 day MACD of EAFE
Dec
2005
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2006
Feb
Mar

QQV (option implied volatility)
21-day average daily
absolute % change
QQQQ daily
21-day +/- 2 std. dev.
Bollinger Bands
Volume
x1000
19-39 day MACD
A M J J A S O N D 2004 M A M J J A S O N D 2005 M A M J J A S O N D 2006 M


Russell 1000 Growth Index
21-day +/- 3%
moving average bands
19-39 day MACD
540
535
530
525
520
515
510
505
500
495
490
485
480
475
470
465
460
455
450
445
440
1
0
Nov
Dec
2005
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2006
Feb
Mar

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- You can have a free trial of our newsletter, Systems and Forecasts, now in its 33rd year of publication.—see me or visit my website.
- See me after the talk if you are interested in purchasing technical analysis training material including Gerald Appel’s new book or the classic MACD video.