

\* See page 46 for representative indexes.

## E.C. Harwood and AIS

AIER's founder E.C. Harwood studied business cycles and financial markets for over five decades, beginning in the 1920s. Shortly before his death in 1980 he observed:

*"Neither AIER nor AIS is a run-of-the-mill organization. The striking differences are:*

*1. Unlike practically all other economic research and educational organizations, AIER does not seek support from major foundations. In order to preserve its independence and freedom from influence by sources of great wealth, AIER's primary support is sought from thousands of individuals.*

*2. AIER's publications do not sacrifice scientific accuracy in the interests of finding a broader market by misleading simplification. AIER does report its findings in plain language without euphemisms intended to avoid antagonizing some readers, but it does not sensationalize or depart from accurate reporting.*

*3. AIS follows AIER's example as is described above and is otherwise different from most investment services:*

*a. No predictions of market movements ever are offered. On the contrary, the impossibility of successfully forecasting market trends, even as long as ordinary business cycles, is stressed frequently. One result is that its subscribers do not include a large percentage of brokers' offices needing to generate commissions.*

*b. A second result is that AIS publications do not appeal to the millions of investors who are addicted to chasing stock-market fluctuations."*

Inquiry, of course, has no necessary end. All that we think we know must be considered refutable. Therefore, in the following article we reassess the question of market timing over the business cycle, considering that nearly 36 years of data have accumulated since ECH's passing.

## Market Trends and Business Cycles

Investing your savings in the stock market for the long term requires faith that capitalism will continue to generate economic growth. Absent a prosperous economy, firms' earnings and returns to shareholders would fail to provide the future cash flow necessary for investors to meet their financial objectives.

Wise investors understand this, and therefore often ask whether it is prudent to monitor the business cycle in order to sell their stocks as the economy slows down and reinvest when expansion

resumes. As with all market timing strategies, this is a gamble. In this article we address this question methodically. We begin with an overview of business cycle forecasting, and then assess the plausible connection between business cycles and the stock market.

### Statistical Indicators

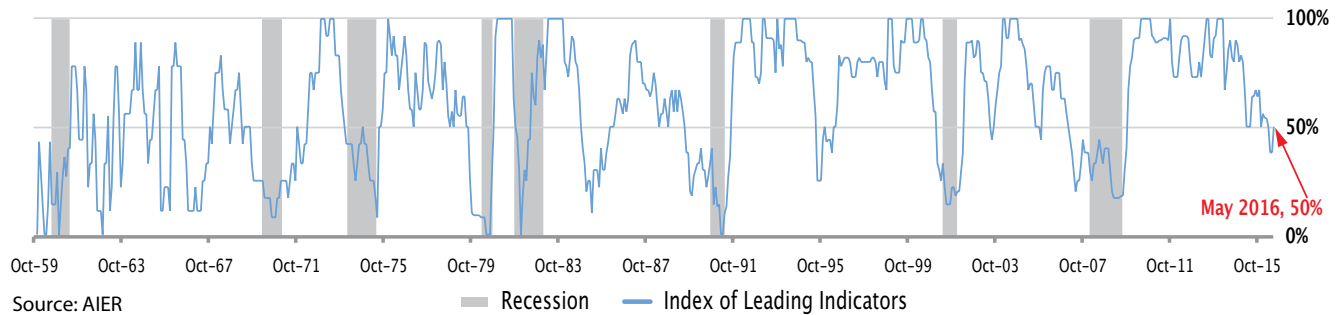
The National Bureau of Economic Research (NBER) Business Cycle Dating Committee is the official arbiter of

recessions. But recessions are announced only after a lag of several months. So no one knows with certainty whether a recession has begun or ended until well after the fact.

There are, however, many models that attempt to forecast the business cycle. As data have accumulated and computing power has grown exponentially, many macroeconomic formulations, some based on sophisticated econometric reasoning, have emerged.

*(continued next page)*

## Percent of Leading Indicators Expanding



Despite these advances no model has proven reliable as a means of predicting recession or recovery far in advance.

Economists have had some success with shorter term business cycle predictions. AIER has been studying statistical indicators (SI) categorized by their tendency to lead, coincide with, or lag economic growth, since they were first published by the NBER in the 1950s. AIER has continually refined its model, which provides an empirical assessment of the likelihood of a turning point in the economy (expansion or recession) over the next six to twelve months. The SI provides a track record spanning many decades that encompass several business cycles.

The chart above depicts AIER's "diffusion index" of leading indicators, which is the percent of leading indicators pointing toward continued economic expansion. Grey regions indicate periods of economic recession. There have been eight recessions since 1959.

The economy has been expanding since July 2009. However, at the end of last month (May 2016) only 50% of the leading indicators were positive (indicating continued expansion), following two consecutive months when the index stood at 38%. But what does this 50% threshold mean in historical context, with regard to the likelihood of recession?

The most recent recession began in January 2008. The index had fallen below 50% in January 2007, suggesting an increased likelihood of recession. It remained below 50% and fell to 25% during the first month of the recession. The previous recession was also preceded by a drop in the index below 50% (in December 2000), where it remained, hitting a low (14%), just one month after recession started. As we continue backward to 1959, it becomes clear that the leading indicators index

fell below 50% in advance of all but one recession<sup>1</sup>, though lead times varied.

The leading indicators were far from infallible. While they provided advance warning of recessions that did occur, there were also several "false signals", when the index registered below 50% for several months and subsequently rebounded, but recession never ensued (such as September 1984 – February 1986 and June 1995 - April 1996). It is also apparent that the indicators, using the 50% threshold, were not useful for predicting recoveries. On most occasions the index rose above 50% only after recession had officially ended.

All of this suggests that the indicators can be quite useful as a conservative means of preparing for recession. This is important for households that are inclined to engage in precautionary saving and "consumption smoothing" over the business cycle. Consider a family breadwinner employed in a field sensitive to recession, such as a construction worker. In anticipation of a coming recession indicated by the SI, he could increase his rate of savings in the present to avoid a cash crisis in the event he is laid off in the near future. He might be willing to do so despite the risk of living meagerly today in order to avoid a recession that never occurs (i.e. a false signal from the SI).

AIER's staff economists do not base their outlook on a purely numerical evaluation such as the one described, nor do they rely on leading indicators alone. Our depiction is intended only to point out the difficulties inherent in predicting business cycles based on macroeconomic data. AIER's statistical indicators provide the best means available for gauging in advance turning points in the business cycle. But as we will see, investors who attempt to use them to avoid market turmoil during recessions do so at great risk.

## Business Cycles versus Market Cycles

It is apparent that predicting business cycles is itself a steep challenge. But it is nonetheless useful to pose a hypothetical question, granting a generous assumption: Even if somehow we knew in advance exactly when the next recession would begin and end, could we use that information to form an effective market-timing strategy? To answer that, we first must examine the data to see if there is a consistent relationship between the business cycle and the stock market.

Table 1 shows stock market returns during every recession since 1926. An investor with perfect business cycle foresight who abandoned stocks precisely at the start of each recession and reentered precisely at the end would have avoided losses during seven of 15 recessions but missed out on gains during eight.

It is clear that the stock market has not reacted consistently during recessions. The magnitude of gains and losses during recessions is also sobering; annualized returns ranged between 37.4% and -33.6%. Investors who pulled out during recessions clearly would have avoided volatility, but the opportunity cost of doing so was often great. There is no empirical evidence that stocks tend to generate losses during recessions. In fact stock market timers who got in at the beginning of each recession and exited at the end of each recession would have avoided average (arithmetic) annualized losses of 13.2% during the seven recessions with stock market losses, but missed out on average gains of 22.8% during the eight recessions when market returns were positive.

This outcome shouldn't be surprising. The stock market is constantly evaluating news of all kinds, and is

Recession		Duration (Months)	Total Return	Annualized Total Return
Beginning Month	Ending Month			
Nov-26	Nov-27	13	41.1%	37.4%
Sep-29	Mar-33	43	-76.9%	-33.6%
Jun-37	Jun-38	13	-24.0%	-22.4%
Mar-45	Oct-45	8	19.5%	30.7%
Dec-48	Oct-49	11	15.2%	16.7%
Aug-53	May-54	10	24.2%	29.7%
Sep-57	Apr-58	8	-1.5%	-2.3%
May-60	Feb-61	10	20.3%	24.9%
Jan-70	Nov-70	11	-1.7%	-1.9%
Dec-73	Mar-75	16	-7.9%	-6.0%
Feb-80	Jul-80	6	9.5%	19.8%
Aug-81	Nov-82	16	14.6%	10.7%
Aug-90	Mar-91	8	8.0%	12.2%
Apr-01	Nov-01	8	-0.9%	-1.3%
Jan-08	Jun-09	18	-35.0%	-25.0%

therefore recognized as a leading indicator of the business cycle, not the other way around<sup>2</sup>. *Because the stock market is a forward-looking mechanism, losses are typically concentrated in the earliest months of recessions and gains are concentrated in the earliest months of recovery.* The upshot, for investors who hope to flee the market in order to avoid the volatility associated with recession, is that they tend to get “whipsawed.” They often end up selling only after the news of recession has been priced into market valuations, thus locking in portfolio losses, and by missing out on subsequent gains by re-entering the market only after the market has generated strong returns.

This is corroborated by external research<sup>3</sup> (see Table 2). The average monthly return over 14 recessions (1926-2007), from peak to trough was 0.5%, but the average monthly return over the three months *around* the peak (the peak month as well as the month immediately before and after the peak) was -1.4%. During the nine most recent recessions the effect was even more dramatic; the average monthly peak to trough return was 0.7% versus -2.1% over the three months around the peak. Similarly, the returns generated during the three months *around* the trough were 4.3% percent, or nearly four times the 1.2% return earned during the other months of the expansion (trough to peak). The duration of recessions has varied widely, between 6 and 43 months (Table 1), which underscores the difficulty of timing these narrow turning points.

### Investor Know Thyself

To recap the plight of the market timer: Predicting recessions is very difficult to begin with, and the challenge becomes nearly insurmountable considering that the successful timer must identify in advance not only the few critical months when he must reduce his equity exposure, but also the narrow window when he must get back in.

The relevant question for investors isn't “Where are we in the cycle?” Rather, it is “Where are you in your life?” Many of our clients reach out to us seeking for help with retirement planning. They often feel that they have enough saved for a secure retirement, but wonder whether they should take some risk off the table.

But this question concerns how much growth an investor needs in order to reach her goals, considering her stage of life and other personal circumstances. The answer to that question is independent of what the market might do. If she is confident she has plenty saved for a secure retirement even if the market should underperform over the next few years, she may well conclude

that there is no longer any point in maintaining substantial exposure to high risk/high return equities.

Contemplating the future direction of capital markets is also costly in another sense. Pondering the market is a distraction from focusing on factors that are both within your control and have a significant impact on your ability to meet your goals. These include saving an adequate amount and managing your investment-related costs and taxes effectively.

### The Rational Alternative

We have established that stock returns are extremely volatile during recessions. Furthermore, attempting to avoid that volatility by timing the business cycle can carry an even greater risk, given the slim chance of identifying the few key months where the largest losses and gains tend to occur. But there is a way to manage volatility while maintaining reasonable exposure to the stock market.

The key is to maintain a fixed allocation across asset classes throughout the business cycle. Portfolio volatility can be effectively managed by simply rebalancing your holdings to match those targets as security prices change. For our PAM clients we typically employ target allocation “bands” for this purpose. We rebalance a portfolio when the market value of an asset class, as a percentage of the total portfolio market value, strays 15% from its targeted allocation percentage. For example, if client has a 10% target allocation to U.S. small cap stocks, we will rebalance to that target if his actual allocation were to rise above 11.5% or fall below 8.5%.

If stock prices fall sufficiently to trigger a reallocation, which may well occur just at the onset of recession, this strategy would incrementally sell bonds or reduce cash in order to buy stocks as they are falling in price. Conversely, when stock prices rise sharply, as they

	Nov 1926-Dec 2007 (14 cycles)	August 1953-Dec 2007 (9 cycles)
Peak to Trough	0.5	0.7
Trough to Peak	1.2	1.0
3 Months around Peak	-1.4	-2.1
3 Months around Trough	4.3	4.0

\*CRSP Value-Weighted Market Index<sup>4</sup>

tend to do very early in the recovery phase, one would be incrementally selling stocks to buy bonds or cash. The key advantage is that this is a mechanical process and requires no forecast with regard to when these fleeting but critical turning points will occur.

While rebalancing holds overall portfolio volatility in check throughout the business cycle, volatility is directly related to the frequency of rebalancing. Investors especially sensitive to fluctuations in their portfolio value should rebalance more frequently by adopting tighter allocation bands, although this will generate higher trading costs.

## The Takeaway

1. Recessions are difficult to predict. Business cycle forecasts are generally useful only over the short term and are far from perfect.
2. Even if a perfect business cycle forecast were available, it would not be useful in forming market timing strategies, because capital markets do not respond to business cycles in a predictable manner. Relying on forecasts of critical turning points, which take place over 1-3 months, is exceptionally risky.
3. A prudent investment strategy is available despite these limitations. Current capital market prices reflect investors' perceptions of risk in aggregate and provide the best estimate of value. As such, market prices provide the best information available for maintaining a sound portfolio via periodic rebalancing.
4. AIER's statistical indicators have been continuously refined over 50 years and serve as a sound model for identifying turning points in the business cycle. While they are not useful for predicting stock market changes, they can be quite helpful in cash flow planning and budgeting, for individuals as well as for businesses.

These principals are embedded in our approach. Our recommendations must be consistent with our fiduciary obligation to work in our clients' best interest at all times. Market timing strategies fail to meet this threshold. This is not immutable; economics is a social science and as research evolves a new approach may eventually emerge and displace the old. However, based on the several decades of data available, those who advocate market timing bear the burden of proof, and it is steep indeed.

The following article carries further evidence of this challenge.

*We appreciate the helpful comments of Lawrence Pratt, Professor Emeritus and former Director of Research and Education, AIER, and former President of AIS.*

1. The index fell below 50% one month after the August 1981-November 1982 recession began. 2. Even this link is tenuous however. Paul Samuelson famously quipped in 1966 that the stock market had at the time successfully predicted nine out of the past five recessions. 3. Marlena I. Lee, "Stock Returns over Business and Market Cycles." Dimensional Fund Papers Library, March 2009. 4. Past performance may not be indicative of future results. Therefore, no current or prospective investor should assume that the future performance of any specific investment, investment strategy (including the investments and/or investment strategies recommended by AIS), or product made reference to directly or indirectly, will be profitable or equal to past performance levels. Indexes are not available for direct investment. Historical performance results for investment indexes and/or categories generally do not reflect the deduction of transaction and/or custodial charges or the deduction of an investment-management fee, the incurrence of which would have the effect of decreasing historical performance results. The results portrayed in Tables 1 and 2 portfolio reflect the reinvestment of dividends and capital gains. Returns depicted are hypothetical and do not reflect historical recommendations of AIS.

## "Tactical Allocation" funds: How have they Fared?

Tactical asset allocation funds aim to provide better risk-adjusted returns by changing portfolio allocations based on underlying factors that vary, depending on the fund. Some funds shift assets globally based on projected returns in different markets. Some funds shift back and forth between stocks and bonds. Some have broad mandates that allow a wide range of investment opportunities. Others have a narrow mandate that must keep an equity allocation in a specified range and have a limited set of possible investments.

The question is whether any of these actively managed funds have shown any ability to outperform a simple, passively managed portfolio. The answer, at least for the last five years, is a resounding no.

In 2012 Jeffrey Ptak of Morningstar wrote an article<sup>1</sup> that highlighted the poor performance of tactical asset allocation funds. He compared the performance of the universe of tactical asset allocation funds in Morningstar's database against the performance of Vanguard's Balanced Index fund<sup>2</sup> (VBIAX), which simply maintains a

static allocation of 60% U.S. stocks and 40% U.S. bonds. He found that "very few tactical funds generated better risk-adjusted returns than Vanguard Balanced Index's over the extended time period we studied."

We have updated this research by considering the most recent five-year period. We pulled the mutual funds within Morningstar's "tactical allocation" fund category. We filtered this list to include only funds with data for at least the last five years. We further scrubbed the list by including only the lowest-cost share classes for any funds that offered multiple share classes. This process left us with 58 funds. This is smaller than Ptak's original universe of funds, but he explained that Morningstar formally created the tactical allocation peer group only recently, and it has stricter rules for inclusion than his original dataset. Notably, we only included funds that have survived for the last five years. This rule if anything should bias results in favor of active managers because it excludes funds that were closed (due to poor performance, presumably).

We determined the total returns (gross of dividends, net of fees) for these 58 funds and for the Vanguard fund from Bloomberg. Based on Ptak's prior research, we expected that once again only a handful of these tactical allocation funds would have outperformed the Vanguard fund index after fees.

The results surprised us (see Table 1). Not only has the group of tactical allocation funds underperformed over the prior 5 years, but *not a single fund outperformed Vanguard's fixed allocation index-based fund.*

Zero, nilch, nada...not a single outperformer in the bunch proved superior. One would think by chance alone that at least one of these funds would outperform<sup>3</sup>. But no...their performance has been universally lousy. To be fair we acknowledged that short term (5-year) outcomes can provide spurious results, so we also looked at the 10- and 15-year performance, but again there were exactly zero outperformers! Over the very short term, two of the 58 funds outperformed over the most recent one and three-year periods.

	Number of TA funds	Average Annual Total Return: All TA funds	Average Annual Total Return: VBIAX	Number of TA funds that outperformed VBIAX
1-year	58	-5.4%	1.2%	2
3-year	58	1.3%	7.4%	2
5-year	58	2.1%	7.9%	0
10-year	24	3.4%	6.5%	0
15-year	8	4.5%	6.0%	0

Sources: Morningstar, Bloomberg, Author's calculations. Data through April 29, 2016

Our first reaction was to review our assumptions and our analysis; perhaps we had made a mistake. Maybe the goal of these funds isn't outperformance as we had assumed. Perhaps the goal is to account for volatility and generate better *risk-adjusted* (versus absolute) returns. So we looked next at the ratio of return to standard deviation<sup>4</sup>, as a measure of risk-adjusted return. The results appear in Table 2.

Over the last five years, there was a whopping one fund that had a higher risk-adjusted return than the passive VBIAX. Over the last 10 years, four of the 24 funds had higher risk-adjusted returns than VBIAX, and this was due to less volatility as opposed to higher returns. That is hardly impressive.

Now, at least part of this remarkable underperformance by managed funds is a result of their fees, which are much higher than those of the Vanguard fund. Expense ratios on the 58 funds range from 0.55% to 2.47%, with an average of 1.38%; this average is *17 times* the 0.08% expense ratio of the Vanguard fund. So to compare results on a gross return basis, we added back annual

fees to the 58 funds. Once again we were astonished: even after accounting for Vanguard's huge fee advantage, there was still not a single fund that outperformed the Vanguard fund over the last five years.

Sometimes it is worth getting a bit "wonky" to drive home the point. Financial economists assess fund performance relative to a benchmark by calculating a fund's "alpha." So another way of explaining our findings is that *these funds have been generating negative alpha (losing to the benchmark) before fees, and then assessing fees on average seventeen times those assessed by the benchmark, as compensation to managers for their "skill"!*

To add insult to injury, these funds also tend to have high turnover, that is, they do a lot of trading. Trading generates transaction costs (bid/ask spreads on each trade) and taxable realized gains, neither of which is reflected in the expense ratios cited above.

To demonstrate the relative tax impact more closely, we compared the absolute annualized after-tax returns<sup>5</sup> of the Vanguard fund with those of the only

fund that managed to outperform Vanguard on a risk-adjusted basis.

Taxes would have reduced the absolute returns on the Vanguard fund from 7.91% to 7.18% (a difference of 0.73%). The "outperforming" fund's annualized five-year total absolute return

was 4.68%, but fell to 2.56% percent after accounting for taxes (a difference of 2.12%). The other tactical allocation funds also showed large declines compared with Vanguard after adjusting for taxes.

Some might argue that comparing these funds, which span the universe in terms of approaches (some are explicitly conservative, some aggressive, some use global funds while others are domestic only) is comparing apples and oranges. But granting this flexibility to active managers, while confining the benchmark to U.S. stock and bond indexes, if anything provides an advantage for the active managers.

Admittedly, the heart of this analysis is based on a short (five-year) window. This is due to data constraints; Morningstar has only recently established the tactical allocation fund category. This exercise can be repeated as more data accumulates. These findings moreover are consistent with a vast body of research showing that active managers in general fail to outperform their benchmarks.

	Number of TA funds	Volatility: TA Funds	Return/Volatility	Volatility: VBIAX	Return/Volatility VBIAX:	Number of Funds that outperformed VBIAX (Return / Volatility)
3-year	58	7.8%	0.27	7.0%	1.06	0
5-year	58	8.2%	0.32	7.4%	1.06	1
10-year	24	9.9%	0.42	9.6%	0.68	4
15-year	8	9.4%	0.46	9.0%	0.67	1

Sources: Morningstar, Bloomberg, author's calculations. \*Volatility measured by standard deviation. Return / Volatility calculated as annualized return / annualized standard deviation. Return / Volatility for TA funds calculated as average of annualized total return / annualized standard deviation for all funds with positive returns.

- <http://www.morningstar.com/advisor/t/51504278/in-practice-tactical-funds-miss-their-chance.htm?&single=true>
- This is a Vanguard Admiral share fund, which stipulates a \$10,000 minimum investment.
- The average return of the tactical allocation funds over the last five years was 2.1%, with an average standard deviation of 8.2%. The return of VBIAX was 7.9% with an annual standard deviation of 7.4%. Assuming standard normal returns, this means that we would expect that in any single year about one out of five tactical allocation funds would outperform based on chance alone.
- Volatility is one form of risk but one that is very important to our clients. Standard deviation is the conventional means of measuring volatility. The traditional measure of risk-adjusted return is the "Sharpe Ratio" which subtracts a "risk-free" rate from returns and divides by the standard deviation of returns. Applying the Sharpe ratio and using a risk-free rate of 2%, we find zero outperformers over five or 15 years, and only two outperformers over 10 years.
- Data from Morningstar for SFHYX. The Hundredfold Select Alternative fund Svc.

**THE HIGH-YIELD DOW INVESTMENT STRATEGY**

**Recommended HYD Portfolio**

As of June 15, 2016							—Percent of Portfolio—	
	Rank	Yield (%)	Price (\$)	Status	Value (%)	No. Shares (%) <sup>1</sup>		
Verizon	1	4.28	52.84	Holding**	24.92	29.84		
Chevron	2	4.25	100.63	Holding**	24.15	15.19		
Caterpillar	3	4.10	75.07	Buying	17.56	14.80		
IBM	4	3.72	150.68	Buying	7.40	3.11		
Cisco	5	3.63	28.65	Holding	3.10	6.85		
Pfizer	6	3.45	34.79	Holding	1.67	3.04		
Exxon Mobil	8	3.33	90.16	Holding	5.47	3.84		
General Electric	14	3.01	30.59	Holding	6.98	14.45		
McDonald's	15	2.91	122.25	Selling	4.58	2.37		
AT&T	N/A	4.76	40.29	Selling	4.15	6.51		
Cash (6-mo. T-Bill)	N/A	N/A			0.02	N/A		
Totals					100.00	100.00		

\*\*Currently indicated purchases approximately equal to indicated purchases 18 months ago. <sup>1</sup> Because the percentage of each issue in the portfolio by value reflects the prices shown in the table, we are also showing the number of shares of each stock as a percentage of the total number of shares in the entire portfolio.

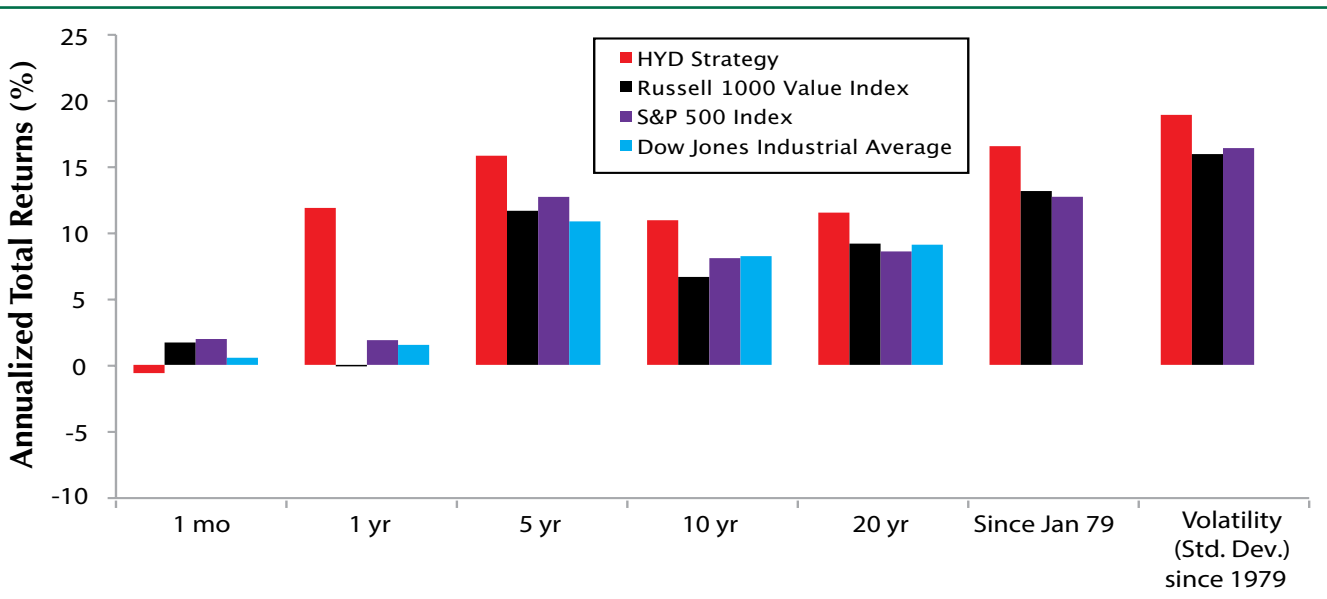
**Performance was achieved by means of retroactive application of a model designed with the benefit of hindsight.**

Subscribers can find a full description of the strategy and methodology in the "Subscribers Only" (Log in required) section of our website: [www.americaninvestment.com](http://www.americaninvestment.com).

**Comparative Hypothetical Total Returns (%) and Volatility**

The data presented in the table and chart below represent total returns generated by a hypothetical HYD portfolio and by benchmark indexes for periods ending May 31, 2016\*. Returns for the 5-, 10- and 20-year periods are annualized, as is the volatility (standard deviation) of returns. (January 1979 is the earliest date for which data was available for both the HYD model and relevant benchmark indexes).

	<u>1 mo.</u>	<u>1 yr.</u>	<u>5 yrs.</u>	<u>10 yrs.</u>	<u>20 yrs.</u>	<u>Since Jan 79</u>	<u>Volatility (Std. Dev.) since 1979</u>
HYD Strategy	-0.57	10.90	14.52	10.04	10.57	15.19	17.36
Russell 1000 Value Index	1.55	-0.06	10.70	6.11	8.42	12.07	14.64
S&P 500 Index	1.80	1.72	11.67	7.41	7.88	11.67	15.05
Dow Jones Industrial Average	0.49	1.39	9.96	7.55	8.35	N/A	N/A



\*Data assume all purchases and sales at mid-month prices (+/- \$0.125 per share commissions), reinvestment of all dividends and interest, and no taxes. **Performance was achieved by means of retroactive application of a model designed with the benefit of hindsight.** Model HYD calculations are based on hypothetical trades following a very exacting stock-selection strategy. They do not reflect returns on actual investments or previous recommendations of AIS. Past performance may differ from future results. Historical performance results for the Russell 1000 Value Index, the Dow Jones Industrial Index and the S&P 500 Index do not reflect the deduction of transaction and/or custodial charges, or the deduction of an investment-management fee, the incurrence of which would have the effect of decreasing historical performance results. HYD Strategy results reflect the deduction of 0.73% management fee, the annual rate assessed to a \$500,000 account managed through our High Yield Dow investment service.

Asset classes and representative index chart on page 41: large cap value, Russell 1000 Value Index; small cap value, Russell 2000 Value Index; large cap growth, Russell 1000 Growth Index; Global REITs, S&P Global REIT Index; foreign developed markets, MSCI EAFE Index; emerging markets, MSCI Emerging Markets Index

## RECENT MARKET STATISTICS

## Precious Metals &amp; Commodity Prices (\$)

	6/15/16	Mo. Earlier	Yr. Earlier
Gold, London p.m. fixing (oz)	1,283.30	1,265.90	1,181.40
Silver, London Spot Price (oz)	17.41	17.09	15.93
Copper, COMEX Spot Price (100 lb)	210.65	207.50	266.95
Crude Oil, W. Texas Int. Spot (bbl)	48.01	46.21	59.52
Bloomberg Commodity Spot Index	323.22	306.26	330.80
Bloomberg Commodity Index	88.47	84.47	100.27
Reuters-Jefferies CRB Index	191.74	182.55	222.55

## Interest Rates (%)

U.S. Treasury bills - 91 day	0.26	0.27	0.01
182 day	0.35	0.36	0.09
52 week	0.50	0.53	0.25
U.S. Treasury bonds - 10 year	1.57	1.70	2.36
Corporates:			
High Quality - 10+ year	3.43	3.57	4.19
Medium Quality - 10+ year	4.50	4.61	5.09
Federal Reserve Discount Rate	1.00	1.00	0.75
New York Prime Rate	3.50	3.50	3.25
Euro Rates			
3 month	-0.27	-0.26	-0.01
Government bonds - 10 year	0.05	0.17	0.81
Swiss Rates - 3 month	-0.77	-0.74	-0.78
Government bonds - 10 year	-0.41	-0.31	0.12

## Exchange Rates (\$)

British Pound	1.420400	1.436500	1.560100
Canadian Dollar	0.774500	0.772900	0.811500
Euro	1.126000	1.130900	1.128300
Japanese Yen	0.009433	0.009205	0.008104
South African Rand	0.065588	0.064919	0.080632
Swiss Franc	1.040200	1.025300	1.075900

\*\*Note: As of 4/15/2016, the source for the exchange rates has changed to Bloomberg.

## Securities Markets

	6/15/16	Mo. Earlier	Yr. Earlier
S & P 500 Stock Composite	2,071.50	2,046.61	2,084.43
Dow Jones Industrial Average	17,640.17	17,535.32	17,791.17
Barclays US Credit Index	2,718.30	2,695.58	2,553.63
Nasdaq Composite	4,834.93	4,717.68	5,029.97
Financial Times Gold Mines Index	1,734.84	1,650.78	1,140.81
FT EMEA (African) Gold Mines	1,796.42	1,768.50	1,174.64
FT Asia Pacific Gold Mines	8,609.04	8,125.18	5,352.92
FT Americas Gold Mines	1,398.04	1,319.78	935.59

## Coin Prices (\$)

	6/15/16	Mo. Earlier	Yr. Earlier	Prem (%)
American Eagle (1.00)	1,298.10	1,299.20	1,225.20	1.15
Austrian 100-Corona (0.9803)	1,238.86	1,239.94	1,146.53	-1.52
British Sovereign (0.2354)	308.10	308.36	287.10	1.99
Canadian Maple Leaf (1.00)	1,282.10	1,283.20	1,204.60	-0.09
Mexican 50-Peso (1.2057)	1,513.59	1,514.91	1,412.90	-2.18
Mexican Ounce (1.00)	1,312.10	1,313.20	1,192.20	2.24
S. African Krugerrand (1.00)	1,283.10	1,284.20	1,204.97	-0.02
U.S. Double Eagle-\$20 (0.9675)				
St. Gaudens (MS-60)	1,280.00	1,310.00	1,245.00	3.09
Liberty (Type I-AU50)	2,150.00	2,150.00	2,225.00	73.16
Liberty (Type II-AU50)	1,375.00	1,375.00	1,425.00	10.74
Liberty (Type III-AU50)	1,270.00	1,285.00	1,235.00	2.29
U.S. Silver Coins (\$1,000 face value, circulated)				
90% Silver Circ. (715 oz.)	13,629.50	13,897.50	12,180.00	9.49
40% Silver Circ. (292 oz.)	5,024.50	5,000.50	4,600.00	-1.16
Silver Dollars Circ.	21,750.00	23,000.00	17,160.00	61.49

Note: Premium reflects percentage difference between coin price and value of metal in a coin, with gold at \$1,283.30 per ounce and silver at \$17.41 per ounce. The weight in troy ounces of the precious metal in coins is indicated in parentheses. Note: The Bloomberg Commodity Spot Index and the Bloomberg Commodity Index were previously the Dow Jones Spot Index and the Dow Jones-UBS Commodity Index, respectively, as of 7/1/14. Data that was being retrieved from Dow Jones is now being retrieved from Bloomberg.

## THE DOW JONES INDUSTRIALS RANKED BY YIELD\*

Ticker Symbol	Market Prices (\$)			12-Month (\$)		Latest Dividend Amount (\$)	Record Date	Indicated Payable Date	Annual Dividend (\$)	Yield† (%)	
	5/13/16	4/15/16	5/15/15	High	Low						
Verizon	VZ	52.84	50.94	47.00	54.49	38.06	0.565	7/8/2016	8/1/2016	2.260	4.28
Chevron	CVX	100.63	100.74	99.29	104.26	69.58	1.070	5/19/2016	6/10/2016	4.280	4.25
Caterpillar	CAT	75.07	70.07	87.13	88.81	56.36	0.770	7/20/2016	8/20/2016	3.080	4.10
IBM	IBM	150.68	147.72	166.26	173.78	116.90	1.400	5/10/2016	6/10/2016	5.600	3.72
Cisco	CSCO	28.65	26.53	28.48	29.49	22.46	0.260	7/7/2016	7/27/2016	1.040	3.63
Pfizer	PFE	34.79	33.19	34.04	36.46	28.25	0.300	5/13/2016	6/1/2016	1.200	3.45
Boeing	BA	130.16	132.12	142.29	150.59	102.10	1.090	5/13/2016	6/3/2016	4.360	3.35
Exxon Mobil	XOM	90.16	88.66	83.72	91.64	66.55	0.750	5/13/2016	6/10/2016	3.000	3.33
Intel Corp	INTC	31.61	29.91	31.39	35.59	24.87	0.260	5/7/2016	6/1/2016	1.040	3.29
Merck	MRK	56.09	53.88	57.12	60.07	45.69	0.460	6/15/2016	7/8/2016	1.840	3.28
Procter and Gamble	PG	82.95	81.23	78.12	83.87	65.02	0.670	4/18/2016	5/16/2016	2.678	3.23
Coca-Cola	KO	45.01	45.35	39.59	47.13	36.56	0.350	6/15/2016	7/1/2016	1.400	3.11
J P Morgan	JPM	61.97	61.20	67.99	70.61	50.07	0.480	7/6/2016	7/31/2016	1.920	3.10
General Electric	GE	30.59	29.64	27.21	32.05	19.37	0.230	6/20/2016	7/25/2016	0.920	3.01
McDonald's	MCD	122.25	128.83	94.30	131.96	87.50	0.890	6/6/2016	6/20/2016	3.560	2.91
Microsoft Corp.	MSFT	49.69	51.08	45.48	56.85	39.72	0.360	8/18/2016	9/8/2016	1.440	2.90
Wal-Mart Stores	WMT	71.12	64.94	71.93	74.14	56.30	0.500	8/12/2016	9/6/2016	2.000	2.81
Johnson & Johnson	JNJ	116.41	113.56	97.49	117.74	81.79	0.800	5/24/2016	6/7/2016	3.200	2.75
3M Company	MMM	167.80	168.32	155.87	172.80	134.00	1.110	5/20/2016	6/12/2016	4.440	2.65
United Tech.	UTX	100.54	100.27	114.61	115.78	83.39	0.660	8/19/2016	9/10/2016	2.640	2.63
Travelers	TRV	111.81	112.67	98.79	118.28	95.21	0.670	6/10/2016	6/30/2016	2.680	2.40
Apple	AAPL	97.14	90.52	126.92	132.97	89.47	0.570	5/9/2016	5/12/2016	2.280	2.35
Dupont	DD	65.76	62.91	65.59	75.72	47.11	0.380	5/13/2016	6/10/2016	1.520	2.31
Home Depot, Inc.	HD	126.53	133.13	110.01	137.82	92.17	0.690	6/2/2016	6/16/2016	2.760	2.18
American Express	AXP	61.42	64.12	79.25	81.92	50.27	0.290	7/1/2016	8/10/2016	1.160	1.89
Unitedhealth Group	UNH	137.26	129.00	118.98	140.89	95.00	0.625	6/17/2016	6/28/2016	2.500	1.82
Goldman Sachs	GS	146.16	155.34	211.76	218.77	139.05	0.650	6/1/2016	6/29/2016	2.600	1.78
Walt Disney	DIS	98.27	100.52	110.18	122.08	86.25	0.710	12/14/2015	1/11/2016	1.420	1.44
Nike	NKE	54.31	57.31	51.68	68.20	47.25	0.160	6/6/2016	7/5/2016	0.640	1.18
Visa Inc.	V	78.17	76.83	68.57	81.73	60.00	0.140	5/13/2016	6/7/2016	0.560	0.72

\* See the Recommended HYD Portfolio table on page 38 for current recommendations. † Based on indicated dividends and market price as of 6/15/16.

Extra dividends are not included in annual yields. H New 52-week high. L New 52-week low. All data adjusted for splits and spin-offs. 12-month data begins 6/15/15.

I Dividend increased since 5/15/16 D Dividend decreased since 5/15/16

RECOMMENDED INVESTMENT VEHICLES

Descriptive Quarterly Statistics, as of 3/31/16

Annualized Returns<sup>4</sup> (%), as of 5/31/16

Security Symbol	Avg. Market Cap. / Avg. Maturity	No. of Holdings	Ratios		12 Mo. Yield (%)	Annualized Returns <sup>4</sup> (%)					
			Expense <sup>3</sup> (%)	Sharpe Ratio		1 yr.	3 yr.	5 yr.	1 yr.	3 yr.	5 yr.
<b>Short-/Intermediate Fixed Income</b>											
Vanguard Short-Term Bond Index	2.8 Yrs.	2285	0.16	0.73	1.39	1.43	1.31	1.46	0.82	0.73	0.85
iShares Barclays 1-3 Yr. Credit Bond	2.01 Yrs.	1039	0.20	1.14	1.26	1.24	1.15	1.39	0.68	0.67	0.86
iShares Barclays 1-3 Yr. Treasury Bond	1.90 Yrs.	106	0.15	0.57	0.58	0.59	0.64	0.57	0.39	0.45	0.39
Vanguard Limited-Term Tax-Exempt SPDR N.B. Short-Term Municipal Bond	3.3 Yrs.	-	0.20	0.94	1.48	2.04	1.35	1.63	2.05	1.35	1.63
	3.01 Yrs.	700	0.20	0.59	0.93	1.77	1.11	1.33	1.64	1.06	1.26
<b>Inflation-Protected Fixed Income</b>											
iShares Barclays TIPS Bond	8.41 Yrs.	41	0.20	-0.26	0.32	1.15	0.27	2.24	1.01	-0.12	1.62
Vanguard Inflation-Protected Securities	8.7 Yrs.	-	0.20	-0.27	0.73	1.27	0.16	2.22	0.95	-0.49	1.34
<b>International Fixed Income</b>											
Vanguard Total International Bond Index	9.1 Yrs.	3960	0.17	-	1.54	4.42	4.52	--	3.73	3.85	--
<b>Real Estate</b>											
Vanguard REIT Index	16.47 B	156	0.26	0.56	4.22	10.57	10.17	10.19	8.98	8.81	8.99
SPDR Dow Jones REIT	20.55 B	97	0.25	0.58	3.62	9.95	10.25	9.85	8.17	8.61	8.40
Vanguard Global ex-US Real Estate	8.92 B	648	0.36	-0.01	2.86	-4.31	2.19	4.38	-5.84	0.68	2.88
iShares International Property ETF	10.27 B	392	0.48	0.14	3.27	-1.65	3.95	5.15	-2.58	2.70	3.88
SPDR Dow Jones Global Real Estate ETF	17.05 B	232	0.50	0.39	3.15	5.04	7.26	7.45	3.64	5.73	6.02
<b>U.S. Large Cap Value</b>											
Vanguard Value Index	124.31 B	328	0.22	0.90	2.61	1.27	9.84	10.78	0.56	9.10	10.09
iShares Russell 1000 Value Index	110.57 B	686	0.20	0.75	2.54	-0.20	9.01	10.48	-0.80	8.44	9.97
<b>U.S. Mid Cap</b>											
Vanguard Mid-Cap ETF	0.48 B	1429	0.60	0.42	1.50	-2.62	10.35	10.04	-3.04	9.96	9.70
iShares Russell Mid-Cap Index	3.18 B	856	0.20	0.65	2.95	-2.12	10.00	10.16	-2.57	9.56	9.76
<b>U.S. Small Cap Value</b>											
iShares Russell Microcap Index	141.10 B	637	0.20	1.06	1.40	-9.44	6.44	7.63	-9.83	6.06	7.26
Vanguard Small-Cap Value Index	123.88 B	351	0.22	0.92	1.28	-1.48	9.59	10.25	-2.07	9.01	9.70
<b>U.S. Marketwide</b>											
Vanguard Total Stock Market Index	107.87 B	3703	0.16	0.89	1.93	0.14	10.52	11.12	-0.33	10.02	10.67
Fidelity Spartan Total Market Index	108.01 B	-	0.10	0.89	2.40	0.08	10.38	11.03	n/a	n/a	n/a
<b>Foreign-Developed Markets</b>											
iShares MSCI EAFE Growth Index	55.17 B	551	0.40	0.18	1.81	-5.83	3.38	3.01	-6.09	3.04	2.73
iShares MSCI EAFE Value Index	54.00 B	481	0.40	-0.09	3.78	-13.85	0.01	0.69	-14.36	-0.67	0.14
Vanguard FTSE Developed Market	39.64 B	3708	0.09	0.09	2.95	-9.02	2.52	2.25	-9.66	1.79	1.67
SPDR S&P International Small Cap	1.19 B	2296	0.40	0.20	2.65	-1.21	5.83	3.57	-2.03	3.98	2.29
<b>Foreign-Emerging Markets</b>											
Vanguard FTSE Emerging Market Stock	37.05 B	3451	0.33	-0.51	3.04	-18.31	-4.41	-4.76	-19.07	-5.20	-5.38
<b>Gold-Related Funds</b>											
iShares Gold Trust	7.32 B	-	0.25	-0.39	-	1.47	-4.80	-4.86	1.47	-4.80	-4.86
SPDR Gold Shares	32.19 B	-	0.40	-0.40	-	1.32	-4.94	-5.01	1.32	-4.94	-5.01

Data provided by the funds and Morningstar. <sup>1</sup>Exchange Traded Fund, traded on NYSE. <sup>2</sup>0.5% fee for redemption in 90 days. <sup>3</sup>For Vanguard funds, expense ratios shown are for mutual funds, ETFs have lower expenses. <sup>4</sup>For Vanguard Funds, returns shown are for mutual funds; ETFs' returns may deviate. <sup>5</sup>VGXRX includes a 0.25% fee on purchases and redemptions, which are paid directly into the fund. <sup>6</sup>These are admiral shares and have a \$10,000 required minimum initial investment. \*Pre-liquidation. Calculated using the highest individual federal income tax rates in effect at the time of each distribution and do not reflect the impact of state and local taxes or individual tax situations.

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