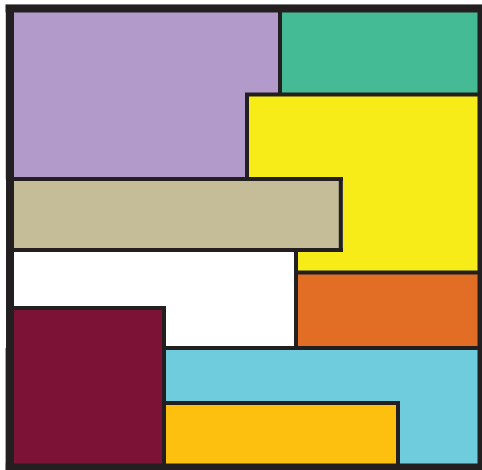
PORTFOLIO



New Map of Performance

A revised chart helps explain returns and highlights the greatest challenges for diversified investors. **By Craig L. Israelsen**

The world of finance could not function without tools for interpreting data. One such tool, the well-known Callan chart (known formally as the Periodic Table of Investment Returns by Callan Associates) offers an incredibly valuable visual depiction of the year-to-year performance of various asset classes.

It provides an easy-to-understand snapshot that makes a couple key points: Past performers seldom repeat in a logical pattern. And there is no discernible pattern that would allow an investor to pick the next year's winner.

But the Callan chart lacks one aspect of comparative performance analysis: the magnitude of performance differential among the various asset classes. In other words, there is no visual representation of how different the best- or worst-performing asset classes are from year to year, because the returns of all the various asset classes are contiguously stacked on top of each other, from high to low. In short, there is no spatial separation between the returns of the various asset classes.

To address this, I've expanded the Callan chart. See "Diversified Portfolio Performance" on the next page.

Over the 10-year period from 2003 to 2012, 12 major asset classes are represented by 11 indexes – S&P 500, S&P Mid Cap 400, S&P Small Cap 600, MSCI EAFE, MSCI Emerging Markets, Dow Jones U.S. Select REIT, S&P North American Natural Resources Sector, Deutsche Bank Liquid Commodity Optimum Yield, Barclays U.S. Aggregate Bond, Barclays U.S. TIPS, Barclays Global Treasury ex-U.S. – plus three-month U.S. Treasury bills. Each asset class is represented by a separate color.

Also, while typical performance charts include only single asset classes, this chart also includes the performance of a multi-asset portfolio. The year-to-year performance of an equally weighted, annually rebalanced combination of all 12 asset classes is shaded in maroon with larger white text.

READING THE CHART

As with the traditional Callan chart, the diversified portfolio chart reveals a patchwork of performance. One of the purposes of this type of visual representation of performance is to remind investors and advisors of a few key market truisms: that performance across a wide variety of asset classes is highly variable, that past winners and losers do not necessarily repeat their performance the following year, and that the variation of returns of the individual asset classes, from high to low, can be remarkably large.

A few things jump out here. In five out of the 10 years, the worst-performing asset class was cash, although in 2008 cash was the third best performer.

While commodities is often perceived as a wildly volatile asset class, only once during this 10-year period did broad-basket commodities exposure land at either of the extremes. (The exception was 2004, when commodities was the best-performing asset class.)

For emerging markets equity, it's feast or famine: In six out of 10 years, the asset class had either the highest or second highest return, but in two years (2008 and 2011) it was at the bottom.

DIVERSIFIED PORTFOLIO PERFORMANCE

SEE THE RANGE OF RETURNS FROM 2003–2012 FOR 12 ASSET CLASSES AND A DIVERSIFIED PORTFOLIO.

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
U.S. Large-Cap Equity	28.68	10.88	4.91	15.79	5.49	–37.00	26.46	15.06	2.11	16.00
U.S. Mid-Cap Equity	35.62	16.48	12.56	10.32	7.98	–36.23	37.38	26.64	–1.73	17.88
U.S. Small-Cap Equity	38.79	22.65	7.68	15.12	–0.30	–31.07	25.57	26.31	1.02	16.33
Developed Non-U.S. Equity	38.59	20.25	13.54	26.34	11.17	–43.38	31.78	7.75	–12.14	17.32
Emerging Non-U.S. Equity	56.28	25.95	34.54	32.59	39.78	–53.18	79.02	19.20	–18.17	18.63
Real Estate	36.18	33.16	13.82	35.97	–17.55	–39.20	28.46	28.07	9.37	17.12
Natural Resources	34.40	24.59	36.61	16.85	34.44	–42.55	37.54	23.88	–7.35	2.20
Commodities	26.86	38.27	31.96	16.96	32.62	–30.94	16.15	12.39	–0.73	1.12
U.S. Aggregate Bonds	4.10	4.34	2.43	4.33	6.97	5.24	5.93	6.54	7.84	4.22
Inflation-Protected Bonds	8.40	8.46	2.84	0.41	11.64	–2.35	11.41	6.31	13.56	6.98
International Bonds	18.21	12.06	–8.79	7.28	10.94	9.43	4.35	6.12	5.24	1.76
Cash	1.01	1.37	3.13	4.71	4.38	1.37	0.15	0.14	0.05	0.09
7Twelve Diversified Portfolio	27.26	18.21	12.93	15.56	12.30	–24.99	25.35	14.87	–0.08	9.97

RANGE OF RETURN (High Return to Low Return)

2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
56.28	38.27	36.61	35.97	39.78	9.43	79.02	28.07	13.56	18.63
38.79	33.16	34.54	32.59	34.44	5.24	37.54	26.64	9.37	17.88
38.59	25.95	31.96	26.34	32.62	1.37	37.38	26.31	7.84	17.32
36.18	24.59	13.82	16.96	12.30	-2.35	31.78	23.88	5.24	17.12
35.62	22.65	13.54	16.85	11.64	-24.99	28.46	19.20	2.11	16.33
34.40	20.25	12.93	15.79	11.17	-30.94	26.46	15.06	1.02	16.00
28.68	18.21	12.56	15.56	10.94	-31.07	25.57	14.87	0.05	9.97
27.26	16.48	7.68	15.12	7.98	-36.23	25.35	12.39	-0.08	6.98
26.86	12.06	4.91	10.32	6.97	-37.00	16.15	7.75	-0.73	4.22
18.21	10.88	3.13	7.28	5.49	-39.20	11.41	6.54	-1.73	2.20
8.40	8.46	2.84	4.71	4.38	-42.55	5.93	6.31	-7.35	1.76
4.10	4.34	2.43	4.33	-0.30	-43.38	4.35	6.12	-12.14	1.12
1.01	1.37	-8.79	0.41	-17.55	-53.18	0.15	0.14	-18.17	0.09

Source: Lipper data

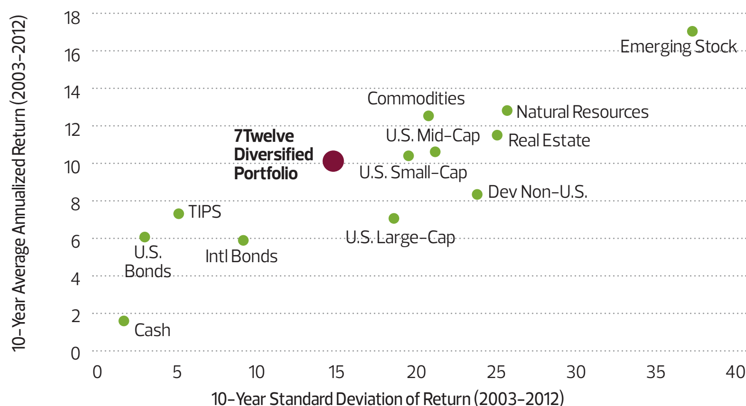
During the later years in this 10-year span, the returns of the 12 asset classes have been more tightly bunched together. The "spread" of returns was particularly narrow in 2012, compared with 2003, 2007 or 2009, when top-to-bottom performance variation was quite wide.

Although the performance of individual asset classes is worth knowing, it is far more important to have a sense of how an overall portfolio performs. It's one thing to taste all the separate ingredients of salsa, but it's far more important to evaluate the salsa itself.

Note that the location of the maroon box – the overall performance of the diversified portfolio – is never the highest and never the lowest. Rather, it ranged from fourth place (2007) to eighth place (2003, 2009 and 2011). As a mix of all 12 asset classes, of course, it represents an average of all 12 – so by mathematical rule, it can never be the highest or lowest.

Ideal Location

Compare the risk/return of all 12 asset classes against that of a diversified portfolio for the 10 years from 2003 to 2012.



Source: Lipper data, author calculations

KEY CHALLENGES

The fact that a broadly diversified portfolio produces a middle-of-the-road return is more than simply a mathematical reality. It also represents the challenges faced by those who invest in a broadly diversified manner.

First, a broadly diversified portfolio will never be the best performer in any given year when compared with its constituent ingredients – though it will never be the worst performer, either. For investors (or even advisors) who need to "own the winner" each year, the performance of a diversified portfolio may not be satisfying. But that's the rub: No investor has the foresight, at the start of each year, to know which asset class will end up the winner.

Here's where performance comparison becomes vital – which leads to the second challenge. The performance of a broadly diversified portfolio (or, indeed, any portfolio) will be benchmarked against some standard of performance – and the typical standard is the S&P 500 index, perhaps the most well-known investment index on the planet. That's not the correct performance benchmark for a multi-asset portfolio, of course, but the S&P 500 will be used precisely because it is so broadly published and advertised. In reality, a portfolio like this 12-asset model *should* behave differently from the S&P 500 because it contains many different ingredients – including, in this case, the S&P 500. (It's sort of like having someone criticize salsa for tasting different from fresh tomatoes.)

GOOD ENOUGH?

So is middle-of-the-road performance good enough? The S&P 500 ended the period from 2003 to 2012 with an average annualized return of 7.10%, while the diversified portfolio had a 10-year annualized return of 10.10%. So diversification comes out ahead on that front.

Also consider risk. As shown in the "Ideal Location" chart above, the risk/return location of the 12-asset-class portfolio is much more attractive – that is, closer to the coveted northwest quadrant of the chart – when compared with the risk/return location of U.S. large-cap equities (represented by the S&P 500).

Among the other asset classes, the four fixed-income classes (cash, U.S. bonds, international bonds and TIPS) had lower standard deviation of returns, but a lower return as well. And of the remaining eight asset classes, six had higher returns but with a higher level of volatility (i.e., risk). Two indexes (U.S. large-cap and non-U.S. developed equity) actually had the undesirable combination of lower return and higher risk than the diversified portfolio.

So in the end, it turns out, diversification provides a winning combination of risk and return – but it does require time and patience to fully play out. FP

Craig L. Israelsen, a *Financial Planning* contributing writer in Springville, Utah, teaches in the Personal Financial Planning program at Utah Valley University. He is also the developer of the 7Twelve Portfolio.

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7Twelve® Portfolio Index

7Twelve Asset Category	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
US Large Cap Equity	28.58	21.04	-9.10	-11.89	-22.10	28.68	10.88	4.91	15.79	5.49	-37.00	26.46	15.06	2.11	16.00	32.39
US Mid Cap Equity	19.11	14.72	17.51	-0.60	-14.51	35.62	16.48	12.56	10.32	7.98	-36.23	37.38	26.64	-1.73	17.88	33.50
US Small Cap Equity	-1.31	12.40	11.80	6.54	-14.63	38.79	22.65	7.68	15.12	-0.30	-31.07	25.57	26.31	1.02	16.33	41.31
Developed Non-US Equity	20.00	26.96	-14.17	-21.44	-15.94	38.59	20.25	13.54	26.34	11.17	-43.38	31.78	7.75	-12.14	17.32	22.78
Emerging Non-US Equity	-25.34	66.41	-30.61	-2.37	-6.00	56.28	25.95	34.54	32.59	39.78	-53.18	79.02	19.20	-18.17	18.63	-2.27
Real Estate	-17.01	-2.58	31.04	12.35	3.58	36.18	33.16	13.82	35.97	-17.55	-39.20	28.46	28.07	9.37	17.12	1.22
Natural Resources	-14.19	27.23	15.79	-15.59	-12.99	34.40	24.59	36.61	16.85	34.44	-42.55	37.54	23.88	-7.35	2.20	16.49
Commodities	-27.36	43.98	25.45	-7.91	25.59	26.86	38.27	31.96	16.96	32.62	-30.94	16.15	12.39	-0.73	1.12	-8.79
US Aggregate Bonds	8.69	-0.82	11.63	8.44	10.25	4.10	4.34	2.43	4.33	6.97	5.24	5.93	6.54	7.84	4.22	-2.02
Inflation Protected Bonds	3.95	2.39	13.18	7.90	16.57	8.40	8.46	2.84	0.41	11.64	-2.35	11.41	6.31	13.56	6.98	-8.60
International Bonds	18.22	-6.47	-2.83	-3.95	21.89	18.21	12.06	-8.79	7.28	10.94	9.43	4.35	6.12	5.24	1.76	-4.88
Cash	4.77	4.63	5.79	3.43	1.60	1.01	1.37	3.13	4.71	4.38	1.37	0.15	0.14	0.05	0.09	0.06
***7Twelve* Portfolio Index**	**1.51**	**17.49**	**6.29**	**-2.09**	**-0.56**	**27.26**	**18.21**	**12.93**	**15.56**	**12.30**	**-24.99**	**25.35**	**14.87**	**-0.08**	**9.97**	**10.10**

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
High Return												79.02				
		66.41														
						56.28										
		43.98														
						38.79										41.31
						38.59	38.27			39.78		37.54				
						36.18		36.61				37.38				
R						35.62		34.54	35.97	34.44						33.50
A						34.40	33.16		32.59	32.62						32.39
N			31.04					31.96				31.78				
G	28.58	27.23				28.68						28.46	28.07			
E		26.96				**27.26**	25.95		26.34			26.46	26.64			
			25.45		25.59	26.86	24.59					25.57	26.31			
O							22.65					**25.35**	23.88		18.63	22.78
F	20.00	21.04			21.89		20.25		16.96						17.88	
	19.11					18.21	**18.21**		16.85				19.20		17.32	
R	18.22	**17.49**	17.51		16.57		16.48	13.82	15.79			16.15	15.06		17.12	16.49
E		14.72	15.79					13.54	**15.56**	**12.30**			**14.87**		16.33	
T		12.40	13.18	12.35			12.06	**12.93**	15.12	11.64			12.39	13.56	16.00	
U			11.80		10.25		10.88	12.56	10.32	11.17		11.41		9.37	**9.97**	**10.10**
R	8.69		11.63	8.44		8.40	8.46	7.68	7.28	10.94	9.43		7.75	7.84	6.98	
N			**6.29**	7.90				4.91	4.71	7.98		5.93	6.54	5.24	4.22	
	4.77	4.63	5.79	6.54		4.10	4.34	3.13	4.33	6.97	5.24	4.35	6.31	2.11	2.20	
	3.95	2.39		3.43	3.58			2.84		5.49			6.12	1.02	1.76	
	1.51	-0.82		-0.60	1.60	1.01	1.37	2.43	0.41	4.38	1.37	0.15	0.14	0.05	1.12	1.22
	-1.31			**-2.09**	**-0.56**					-0.30				**-0.08**	0.09	0.06
		-2.58	-2.83	-2.37							-2.35			-0.73		-2.02
				-3.95	-6.00									-1.73		-2.27
		-6.47		-7.91												-4.48
			-9.10					-8.79						-7.35		-8.60
				-11.89	-12.99									-12.14		-8.79
					-14.51											
	-14.19		-14.17	-15.59	-14.63											
	-17.01				-15.94					-17.55				-18.17		
				-21.44												
					-22.10											
	-25.34										**-24.99**					
	-27.36															
			-30.61								-30.94					
											-31.07					
											-36.23					
											-37.00					
											-39.20					
											-42.55					
											-43.38					
Low Return											-53.18					