GRIMES AND COMPANY

Grimes Investment Quarterly | 12/31/22

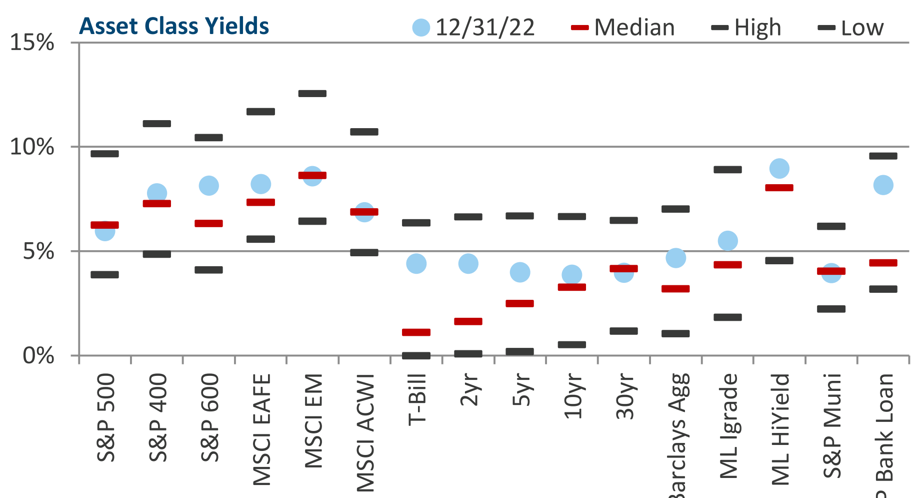
Major Asset Class Returns

Index	Q4'22	2022	2021
S&P 500	8%	-18%	29%
S&P Mid Cap 400	11%	-13%	25%
Russell 2000	6%	-20%	15%
MSCI EAFE	17%	-14%	12%
MSCI Emerging Markets	10%	-20%	-2%
MSCI All Country World	10%	-18%	19%
T-Bill	1%	2%	0%
7-10yr Tsy	1%	-15%	-3%
Barclays Aggregate	2%	-13%	-2%
ML Investment Grade	4%	-15%	-1%
ML High Yield	4%	-11%	5%
S&P Muni	4%	-8%	2%
S&P Bank Loan	4%	-1%	4%

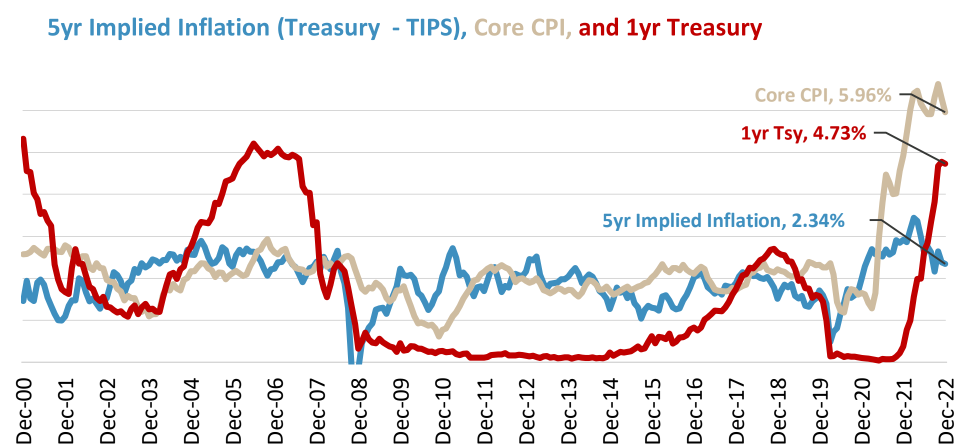
Overview: Most major asset classes bounced back in Q4'22, though still finished the year lower. The S&P 500 (+8% Q4, -18% '22), Russell 2000 (+6% Q4, -20% '22), MSCI EAFE (+17% Q4, -14% '22), MSCI EM (+10% Q4, -20% '22) and the MSCI ACWI (+10% Q4, -18% '22) followed the same pattern. For Fixed Income, interest rates were flat in Q4 after jumping in the prior three quarters (the 10yr yield was 3.88%, versus 3.80% on 9/30/22 and 1.51% on 12/31/21) allowing positive returns in Q4 for the Bloomberg/Barclays Aggregate (+2% Q4, -13% '22), 7-10yr Treasury (+1% Q4, -15% '22), ML Igrade (+4% Q4, -15% '22), S&P Muni (+4% Q4, -8% '22) and ML High Yield (+4% Q4, -8% '22). The low duration S&P Bank Loan Index (+4% Q4, -1% '22) and T-Bill (+1% Q3, +2% '22) held steady in '22.

Asset Class Yields Have Moved Above Averages: After a year when most assets performed poorly, valuations have improved across the board. Asset class yields (earnings yield for equities, yield to maturity for fixed income) for equities are all above average, as are bond yields across the curve and credit quality.

Inflation Expectations Fall as Fed Expectations Rise: The Fed's accelerating rate hike timetable in response to the persistence of inflation was the major market driver in 2022. The chart below shows Core CPI, implied inflation (from TIPS), and the 1 year Treasury yield (as a proxy for Fed policy). Core CPI initially jumped on factors that the Fed defined as transitory and the market, as shown by TIPS implied inflation, agreed. However, when implied inflation broke over 3% in April (as oil spiked due to Russia's invasion of Ukraine), the Fed accelerated its pace of interest rate hikes. 350 bps of rate increases over 5 meetings from 6/15 to 12/16 caused the surge in the 1yr Treasury yield. Yet as CPI and the 1yr have risen, implied inflation expectations have dropped. While high inflation data is garnering headlines, the markets are quickly pricing the expectation that the Fed's rate hikes will bring inflation down. The question is how much the economy will be impacted by this rapid shift.

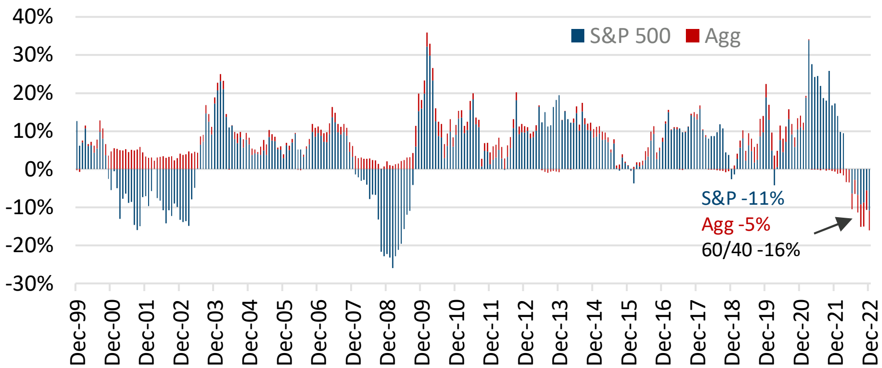


Equity earnings yield (earnings/price) | Fixed Income yield to maturity

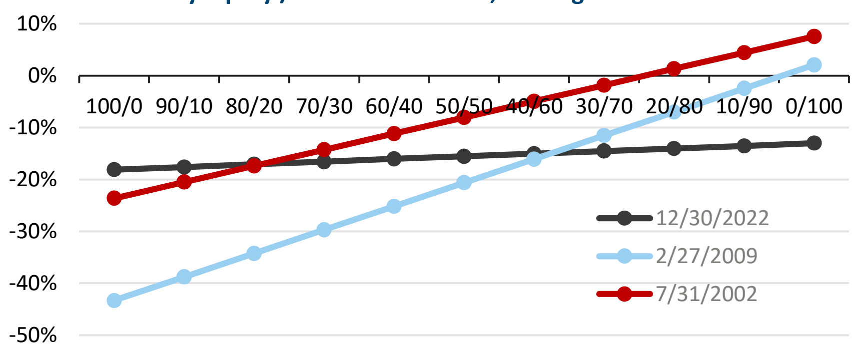


GRIMES AND COMPANY

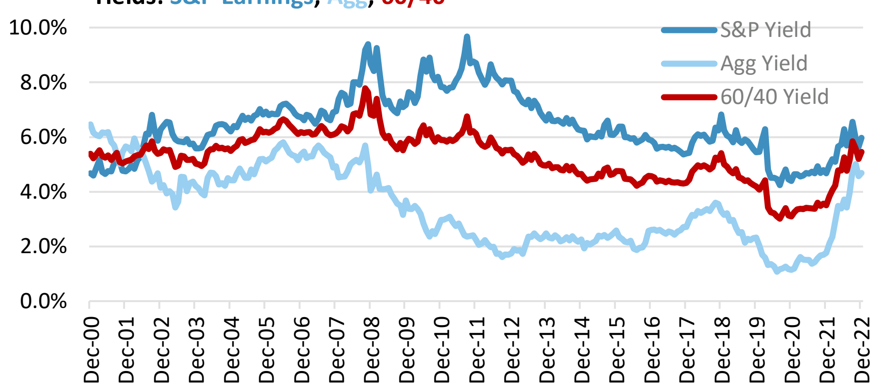
60/40 Portfolio Rolling 12 month Return & Attribution



Returns by Equity / Fixed Income Mix, Trailing 12 months



Yields: S&P Earnings, Agg, 60/40



Balanced Portfolios Fall: In 2022, the typical 60/40 balanced portfolio (60% stocks, 40% bonds) was down 16%. The chart to the left shows the rolling 12 month returns for 60/40, using S&P 500 and Barclays Aggregate total returns, as well as the contribution of stocks (S&P 500, in blue) and bonds (Barclays Aggregate, in red). For the period ending 12/31/22, trailing 12 month returns were -16%. Periods when returns were -10% or lower are infrequent, with only two groupings since 1999, concentrated in the 2001 dotcom crash and the 2008-2009 Global Financial Crisis (GFC). In other words, performance this poor for 60/40 is unusual.

The 2022 case, however, is unique. In 2001 and 2008 the Agg contribution was positive, shown by the positive red bars during those periods. This illustrates the diversification benefit of bonds delivering a positive return while stocks were declining. In 2022, the poor 60/40 performance is the result of both stocks and bonds declining, with both detracting from performance due to the impact of rising rates on both equity and fixed income prices.

While the stock market decline was unpleasant, it was not without precedent. The poor performance of bonds however, was unprecedented, and the poor performance of 60/40 was one of many "normal" investment relationships that was disrupted.

Diversification Diverted: One of the most reliable pillars of investing is that a more conservative portfolio, meaning one with a higher percentage of fixed income, should outperform in a market decline. Even more basically, the equity vs fixed income mix should dictate relative portfolio performance more than any other factor. In 2022, this wasn't the case. Not only was the returns of the 60/40 portfolio undermined by poor bond performance, but the benefits of diversification were reduced as well. The chart to the left shows returns across the equity/fixed income spectrum in three recent downturns: 2001-2002 dotcom crash, 2008-2009 GFC, and 2022. The two older cases show the return curve sloping up, meaning more fixed income reduced the drawdown. But in 2022, the line is flat, as equity and fixed income returns declined equally. For example, in 2022 there was not a difference between a 60/40 and 40/60 portfolio, with both down 16%. In the 2002 dotcom crash, it was 6%, or -11% vs -5%. In the 2009 GFC, it was 9%, or -25% vs -16%.

60/40 Yield has Improved: With 60/40 performing poorly and the equity /fixed income mix not helping, 2022 could lead investors to question the benefits of diversifying. While 2022 was challenging across asset classes and undermined the benefits of diversification, the positive is that a balanced 60/40 portfolio is now the most appealing it has been in ten years. The chart to the left shows the EPS yield on the S&P 500 and the yield to maturity on the Bloomberg Barclays Agg, as well as a "60/40" mix of two. After bottoming out at the end of 2020, and staying low at the end of 2021, the 60/40 yield has risen to 5.46% as of the end of 2022, just surpassing the 2018 level of 5.41%, and on par with levels last seen back in 2012. This improvement is mostly due to rising bond yields from historically low levels. In other words, the poor backdrop for 60/40 at the end of 2021 (esp for bonds) resulted in a poor 2022 (esp for bonds). But that is in the past. Today, the backdrop is better. Future returns are never guaranteed as economic events are unknown, but better valuation tilts the odds in investors favor.

Equity Markets Summary

Headline Indices	Q4'22	2022	2021	Fwd PE*	Avg PE**	+/- avg
Dow	16.0%	-6.9%	20.9%			
Nasdaq	-0.8%	-32.5%	22.2%			
Russell 2000	6.2%	-20.4%	14.8%			
Asset Classes	**Q4'22**	**2022**	**2021**	**Fwd PE***	**Avg PE****	**+/- avg**
S&P 500	7.6%	-18.1%	28.7%	16.7	16.0	5%
S&P Mid Cap 400	10.8%	-13.1%	24.8%	12.8	13.7	-6%
S&P Small Cap 600	9.2%	-16.1%	26.8%	12.3	15.8	-22%
MSCI EAFE	17.4%	-14.0%	11.8%	12.2	13.6	-10%
MSCI Emerging Markets	9.8%	-19.7%	-2.2%	11.6	11.6	0%
MSCI AC World	9.9%	-18.0%	19.0%	14.5	14.5	0%
S&P 500 Sectors	**Q4'22**	**2022**	**2021**	**Fwd PE***	**Avg PE****	**+/- avg**
Consumer Discretionary	-10.2%	-37.0%	24.4%	21.3	17.9	19%
Consumer Staples	12.7%	-0.6%	18.6%	20.9	18.0	16%
Energy	22.8%	65.7%	54.6%	9.8	13.7	-29%
Financials	13.6%	-10.5%	35.0%	11.8	12.4	-4%
Healthcare	12.8%	-2.0%	26.1%	17.6	16.1	9%
Industrials	19.2%	-5.5%	21.1%	18.2	16.0	14%
Technology	4.7%	-28.2%	34.5%	20.1	17.8	13%
Materials	15.0%	-12.3%	27.3%	15.7	15.2	4%
Communication Services	-1.4%	-39.9%	21.6%	14.3	17.9	-20%
Utilities	8.6%	1.6%	17.7%	18.8	14.7	28%
Growth vs Value	**Q4'22**	**2022**	**2021**	**Fwd PE***	**Avg PE****	**+/- avg**
S&P Growth	1.4%	-29.4%	32.0%	18.0	18.4	-2%
S&P Value	13.6%	-5.2%	24.9%	15.5	13.2	17%
International	**Q4'22**	**2022**	**2021**	**Fwd PE***	**Avg PE****	**+/- avg**
Eurozone	22.9%	-17.2%	14.3%	11.6	12.5	-7%
Germany (DAX)	14.9%	-12.3%	15.8%	11.4	12.9	-11%
UK (FTSE)	8.1%	0.9%	14.3%			
Japan (Nikkei)	0.8%	-7.3%	6.7%			
MSCI Asia Pac xJapan	12.2%	-17.2%	-2.7%	14.3	14.5	-2%
S. Korea (KOSPI)	3.8%	-24.9%	3.6%	15.9	19.4	-18%
India (Sensex)	6.1%	5.8%	23.2%			
China (Shenzhen)	3.3%	-21.9%	8.6%	11.2	9.9	13%
S&P Latin America 40	5.0%	11.4%	-12.7%	7.2	11.4	-37%
Brazil (Bovespa)	-0.3%	4.7%	-11.9%	7.2	10.5	-31%
Mexico	10.0%	-5.7%	24.4%	13.1	14.5	-9%

Asset Classes: For Q4'22, most equities partially recovered 2022 losses. The S&P 500 (+7.6% Q4, -18.1% '22), the Russell 2000 (+6.2% Q4, -20.4% '22), the MSCI EAFE (+17.4% Q4, -14.0% '22) and the MSCI EM (+9.8% Q4, -19.7% '22) are all within a few percentage points of one another for the year. With these similar returns combined, the global MSCI ACWI (+9.9% Q4, -18.0% ytd) was in the same range.

Notably, thanks to a Q4 reversal in the dollar, the MSCI EAFE outperformed signficantly in Q4, and edged out the S&P 500 for the year.

A larger dispersion can be seen between the tech-driven NASDAQ (-0.8% Q4, -32.5% '22) and the more traditional Dow Jones (+16.0% Q4, -6.9% '22), which highlights the relative performance of growth and value.

While price declines have not been pleasant, one benefit is that valuations have improved (based on forward PE vs their 20yr average). The S&P 500 is now just above its 20yr average, while the other major indices are at discounts.

S&P Sectors: Almost every S&P sector rose in Q4, with Energy (+23% Q4, +66% '22) and Industrials (+19% Q4, -6% '22) leading the way. Utilities (+9% Q4, +2% '22), Staples (+13% Q4, -1% '22) and Healthcare (+13% Q4, -2% '22) have held up on perceived safety. The laggards were Communications (-1% Q4, -39% '22), Consumer Discretionary (+10% Q4, -37% '22) and Technology (+5% Q4, -28% '22), reflecting a reversal from the prior two years of outperformance. Financials (+14% Q4, -11% '22) and Materials (+15% Q4, -12% '22) rallied in Q4 to post above average 2022 returns.

Growth vs Value: The relative performance of Value versus Growth was notable, as Value (+14% Q4, -5% '22) considerably outperformed Growth (+1% Q4, -29% '22). Interestingly, after the pullback, while Growth is still at a higher PE than Value (18.0 v 15.5), it is now Value that trades at a premium to its historic PE, while Growth is in line with its average.

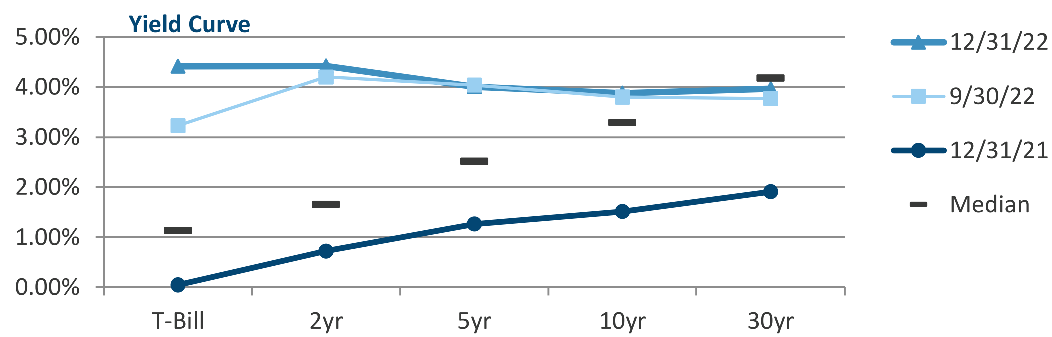
Global Markets: Globally, markets recovered in Q4. Europe (+23% Q4, -17% '22) saw concerns over the Russia-Ukraine crisis fade as energy prices moderated. In Asia, China was the notable laggard (+3% Q4, -22% '22), as concerns over Covid lockdowns and tech stock regulations lingered.

On the other hand, the S&P Latin America 40 index (+5% Q4, +11% '22) is up slightly thanks to higher commodity prices and the presidential election in Brazil.

GRIMES AND COMPANY

Fixed Income Markets Summary

Headline Indices	Q4'22	2022	2021	Yield	Spread	Avg*	+/- avg
Bloomberg Barc Agg	1.9%	-13.0%	-1.5%	4.68%	0.80%	0.36%	0.45%
ML Investment Grade	3.5%	-15.4%	-1.0%	5.51%	1.63%	1.17%	0.46%
ML High Yield	4.0%	-11.2%	5.4%	8.97%	5.10%	4.71%	0.39%
S&P Nat'l Muni	3.9%	-8.1%	1.6%	3.96%	0.09%	0.75%	-0.66%
S&P Leveraged Loan	3.8%	-0.6%	3.5%	8.17%	3.76%	3.98%	-0.22%
T-Bill	0.9%	1.5%	0.0%				
NYMEX 7-10yr Tsy	1.0%	-14.9%	-3.1%				
Treasury Yields	**12/31/22**	**9/30/22**	**12/31/21**			**Avg***	**+/- avg**
T-Bill	4.41%	3.23%	0.05%			1.13%	3.28%
2yr	4.42%	4.20%	0.73%			1.66%	2.76%
5yr	4.00%	4.04%	1.26%			2.52%	1.48%
10yr	3.88%	3.80%	1.51%			3.29%	0.59%
30yr	3.97%	3.77%	1.90%			4.18%	-0.21%
10yr Sovereign Yields	**12/31/22**	**9/30/22**	**12/31/21**			**Avg***	**+/- avg**
US	3.88%	3.80%	1.51%			2.43%	1.45%
Germany	2.53%	2.13%	-0.18%			1.31%	1.23%
Japan	0.42%	0.24%	0.07%			0.26%	0.16%
UK	3.66%	4.14%	0.97%			2.02%	1.64%
France	3.07%	2.74%	0.20%			2.25%	0.82%
Spain	3.61%	3.31%	0.57%			3.29%	0.32%
Italy	4.64%	4.55%	1.17%			3.50%	1.14%
China	2.86%	2.78%	2.79%			3.41%	-0.55%
Brazil	12.90%	12.21%	10.97%			11.02%	1.88%
Mexico	9.02%	9.65%	7.56%			7.42%	1.60%



Asset Classes: The bond market declined for the year as interest rates rose, but was steady in Q4 as rates stabilized, as shown by the returns of the Bloomberg Barclays Aggregate Bond Index (+1.9% Q4, -13.0% '22).

Duration: The primary driver of fixed income performance was duration, which was evident in the Treasury market. The longer duration 7-10 yr Treasury Index (+1.0% Q4, -14.9% '22) underperformed near zero duration 90 day T-Bills (+0.9% Q4, 1.5% '22).

Credit: Despite the market's rising recession concerns, as evident in the declining stock market, credit held up well. Q4's bounce was led by the ML High Yield index (+4% Q4, -11% '22), but it was outpaced on the year by the low duration S&P Leveraged Loan Index (+4% Q4, -1% '22). The ML Investment Grade Index (+4% Q4, -15% '22) lagged with its larger duration component.

Treasury Yields: Rising interest rates are a major market development in 2022. During Q4, the 10yr Treasury was relatively flat, rising just 8 bps from 3.80% to 3.88%. However, for the year, the 10yr yield more than doubled from where it started, at 1.51%, a rise of 237 bps.

Yield Curve: The yield curve is the best tool to examine rate shifts across different maturities. The market's expectations for Fed interest rate hikes over the next two years clearly shifted, as the 2yr Treasury rose 369 bps, from 0.73% to 4.42%, this year. Fed expectations also caused the 10yr Treasury to rise, but only by 237 bps, as the longer end of the curve has to balance the offsetting impact of the short-term Fed rate hikes leading to lower growth or inflation in the long-term.
Short term rates rising faster than long term rates is known as a flattening yield curve. In 2022, not only has the curve flattened, but rates are highest at the short end, then fall as maturity increases. This is known as inversion and is atypical.
Market commentators closely watch the 2yr to 10yr curve. When it is inverted, it is a sign the markets are concerned rate hikes could cause a recession.

Global Rates: Globally, interest rates have moved from negative to positive. Notably, Germany 2.53% vs -.18% on 12/31/21) has moved out of negative yielding territory.

GRIMES
AND COMPANY

Major Economic Indicators and Consensus Forecasts

	2022/2023 Average Forecast				Actual		
	12m ch	Dec-22	Sep-22	Dec-21	Nov-22	Avg*	+/- avg
US GDP	-2.15	1.10	1.30	3.25	2.61	2.83	-0.22
EU GDP	-1.65	1.55	1.70	3.20	4.58	2.16	2.42
Japan GDP	-0.45	1.50	1.55	1.95	1.19	1.31	-0.11
UK GDP	-1.75	1.70	1.70	3.45	3.66	2.81	0.86
China GDP	-1.25	3.95	4.30	5.20	7.82	16.34	-8.52
US CPI	2.18	5.05	5.05	2.88	7.87	2.01	5.86
EU CPI	2.29	3.98	3.98	1.68	10.55	1.28	9.27
Japan CPI	1.63	2.28	1.88	0.65	4.11	0.41	3.70
UK CPI	0.00	1.70	1.70	1.70	11.49	2.02	9.47
China CPI	-0.02	2.15	2.30	2.18	1.97	1.99	-0.01
US UnN	0.40	4.05	3.95	3.65	3.70	4.40	-0.70
EU UnN	-0.38	6.88	6.93	7.25	6.70	8.25	-1.55
Japan UnN	0.00	2.50	2.50	2.50	2.60	2.80	-0.20
UK UnN	-0.20	4.20	4.18	4.40	3.80	4.30	-0.50
China UnN	0.25	4.10	4.00	3.85	5.50	5.20	0.30

Foreign Exchange		Q4'22	2022	2021	2020	2019	2018
Euro		9%	-6%	-7%	9%	-2%	-5%
Yen (Japan)		10%	-13%	-10%	5%	1%	3%
Pound (UK)		8%	-11%	-1%	3%	4%	-6%
Yuan (China)		2%	-8%	3%	7%	-1%	-5%
Won (S. Korea)		13%	-6%	-9%	6%	-4%	-4%
Real (Brazil)		2%	5%	-7%	-23%	-4%	-14%
Peso (Mexico)		3%	5%	-3%	-5%	4%	-1%
Commodities		**Q4'22**	**2022**	**2021**	**2020**	**2019**	**2018**
Oil	$80	0%	7%	56%	-21%	35%	-25%
Gold	$1,814	8%	0%	-4%	25%	18%	-1%
Copper	$3.81	11%	-15%	27%	26%	6%	-20%

GDP: Shifting economic forecasts show how market expectations have changed in the past year. Compared to 12/31/21, blended 2022/2023 GDP forecasts for the US are down 215 bps to 1.10%. EU, UK and Japan have all declined as well, though from a lower level. China remains higher, at 3.95%, but the forecast is down as well. Cumulatively, this reflects the expectation that global central bank action will slow the economy.

CPI: The year over year rise in inflation expectations is the major cause of tighter central bank policy. For the US, on a year over year basis, the CPI forecast has jumped from 2.88% to 5.05%. Of this 2.18% 12 month rise, 1.3% happened just in Q1'22. Similarly, EU CPI forecast has risen from 2.29% to 3.98%.

Unemployment: Unemployment forecasts, thus far, have not moved very much, rising only 40 bps over the past 12 months, to 4.05%. Part of this is because of the tight labor market. But it is also a sign economic forecasters do not think the preceding lower GDP and higher inflation expectations will be enough to impact the labor market. Ironically, with the Federal Reserve focused on the tight labor market, the lack of change is keeping them raising rates, and ultimately making an unemployment boosting downturn more likely.

Foreign Exchange: Currencies have garnered headlines in 2022. With the Fed raising rates faster than most other central banks, during the first 9 months of the year, the dollar strengthened versus most global currencies, especially the euro, yen and pound. This reversed in Q4, with all three of those currencies rising close to 10% versus the dollar. As we observed last quarter, foreign exchange trends possess many self correcting features, and thus tend to reverse course, especially when trends become extreme. Q4'22 appears to be another example of that.
One beneficiary of the falling dollar is EAFE and EM stocks, and this was a tailwind for them in Q4'22.

Commodities: Oil was flat at $80/bbl in Q4'22, leaving it only 7% higher in 2022, and well off its high of $130. The initial price surge after Russia invaded Ukraine was caused by concern over supply shortage. But the spike in oil contributed to inflation pressures, which has caused central banks to accelerate their pace of interest rate hikes, raising recession fears, and causing investors to shift from worries about adequate supply to a drop in demand instead. The lower economic outlook can also be seen in copper, 15% lower on the year despite an 11% Q4 recovery. Although seen as an inflation hedge and safe haven, gold is flat for the year after an 8% Q4 rise.

GRIMES
AND COMPANY

Index Returns | 2005 to Present

	Q4'22	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Dow	16.0%	-6.9%	20.9%	9.7%	25.3%	-3.5%	28.1%	16.5%	0.2%	10.0%	29.7%	10.2%	8.4%	14.1%	22.7%	-31.9%	8.9%	19.0%
Nasdaq	-1.0%	-33.1%	21.4%	43.6%	35.2%	-3.9%	28.2%	7.5%	5.7%	13.4%	38.3%	15.9%	-1.8%	16.9%	43.9%	-40.5%	9.8%	9.5%
Russell 2000	6.2%	-20.4%	14.8%	20.0%	25.5%	-11.0%	14.6%	21.3%	-4.4%	4.9%	38.8%	16.3%	-4.2%	26.9%	27.2%	-33.8%	-1.6%	18.4%
S&P 500	7.6%	-18.1%	28.7%	18.4%	31.5%	-4.4%	21.8%	12.0%	1.4%	13.7%	32.4%	16.0%	2.1%	15.1%	26.5%	-37.0%	5.5%	15.8%
S&P Mid Cap 400	10.8%	-13.1%	24.8%	13.7%	26.2%	-11.1%	16.2%	20.7%	-2.2%	9.8%	33.5%	17.9%	-1.7%	26.6%	37.4%	-36.2%	8.0%	10.3%
S&P Small Cap 600	9.2%	-16.1%	26.8%	11.3%	22.8%	-8.5%	13.2%	26.6%	-2.0%	5.8%	41.3%	16.3%	1.0%	26.3%	25.6%	-31.1%	-0.3%	15.1%
MSCI EAFE	17.4%	-14.0%	11.8%	8.3%	22.7%	-13.4%	25.6%	1.5%	-0.4%	-4.5%	23.3%	17.9%	-11.7%	8.2%	32.5%	-43.1%	11.6%	26.9%
MSCI Emerging Markets	9.8%	-19.7%	-2.2%	18.7%	18.9%	-14.2%	37.8%	11.6%	-14.6%	-1.8%	-2.3%	18.6%	-18.2%	19.2%	79.0%	-53.2%	39.8%	32.6%
MSCI All Country World	9.9%	-18.0%	19.0%	16.8%	27.3%	-8.9%	24.6%	8.5%	-1.8%	4.7%	23.4%	16.8%	-6.9%	13.2%	35.4%	-41.8%	12.2%	21.5%
S&P Growth	1.4%	-29.4%	32.0%	33.5%	31.1%	0.0%	27.4%	6.9%	5.5%	14.9%	32.8%	14.6%	4.7%	15.1%	31.6%	-34.9%	9.1%	11.0%
S&P Value	13.6%	-5.2%	24.9%	1.4%	31.9%	-9.0%	15.4%	17.4%	-3.1%	12.4%	32.0%	17.7%	-0.5%	15.1%	21.2%	-39.2%	2.0%	20.8%
Barclays Aggregate Bond	1.9%	-13.0%	-1.5%	7.5%	8.7%	0.0%	3.5%	2.6%	0.5%	6.0%	-2.0%	4.2%	7.8%	6.5%	5.9%	5.2%	7.0%	4.3%
ML Investment Grade	3.5%	-15.4%	-1.0%	9.8%	14.2%	-2.2%	6.5%	6.0%	-0.6%	7.5%	-1.5%	10.4%	7.5%	9.5%	19.8%	-6.8%	4.7%	4.4%
ML High Yield	4.0%	-11.2%	5.4%	6.2%	14.4%	-2.3%	7.5%	17.5%	-4.6%	2.5%	7.4%	15.6%	4.4%	15.2%	57.5%	-26.4%	2.2%	11.7%
S&P Nat'l Muni	3.9%	-8.1%	1.6%	4.9%	7.4%	1.0%	5.1%	0.4%	3.3%	8.9%	-3.3%	6.5%	11.2%	2.0%	12.2%			
S&P Leveraged Loan	3.8%	-0.6%	3.5%	2.8%	10.7%	-0.6%	3.3%	10.9%	-2.8%	1.0%	5.0%	10.5%	0.6%	9.7%	52.2%	-28.2%	1.7%	6.6%
T-Bill	0.9%	1.5%	0.0%	0.6%	2.2%	1.8%	0.8%	0.3%	0.0%	0.0%	0.0%	0.1%	0.0%	0.1%	0.1%			
7-10yr Tsy	1.0%	-14.9%	-3.1%	10.0%	8.5%	0.9%	2.6%	1.1%	1.6%	9.0%	-6.0%	4.2%	15.6%	9.4%	-6.0%	18.0%	10.2%	2.7%

International	Q4'22	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
MSCI Eurozone	22.9%	-17.2%	14.3%	8.5%	24.2%	-16.2%	29.0%	2.2%	-0.8%	-7.7%	30.0%	22.5%	-16.9%	-3.4%	32.8%	-47.1%	20.3%	37.3%
Germany (DAX)	14.9%	-12.3%	15.8%	3.5%	25.5%	-18.3%	12.5%	6.9%	9.6%	2.7%	25.5%	29.1%	-14.7%	16.1%	23.8%	-40.4%	22.3%	22.0%
UK (FTSE)	8.1%	0.9%	14.3%	-14.3%	12.1%	-12.5%	7.6%	14.4%	-4.9%	-2.7%	14.4%	5.8%	-5.6%	9.0%	22.1%	-31.3%	3.8%	10.7%
Japan (Nikkei)	0.6%	-9.4%	4.9%	16.0%	18.2%	-12.1%	19.1%	0.4%	9.1%	7.1%	56.7%	22.9%	-17.3%	-3.0%	19.0%	-42.1%	-11.1%	6.9%
MSCI Asia Pac xJapan	12.2%	-17.2%	-2.7%	22.8%	19.5%	-13.7%	37.3%	7.1%	-9.1%	3.1%	3.7%	22.6%	-15.4%	18.4%	73.7%	-51.6%	37.2%	33.2%
S. Korea (KOSPI)	3.8%	-24.9%	3.6%	30.8%	7.7%	-17.3%	21.8%	3.3%	2.4%	-4.8%	0.7%	9.4%	-11.0%	21.9%	49.7%	-40.7%	32.3%	4.0%
India (Sensex)	6.1%	5.8%	23.2%	17.2%	15.7%	7.2%	29.6%	3.5%	-3.7%	31.9%	10.7%	28.0%	-23.6%	19.1%	83.3%	-51.8%	48.8%	48.8%
China (Shenzhen)	3.3%	-21.9%	8.6%	35.2%	36.0%	-33.3%	-3.6%	-14.7%	63.4%	33.9%	20.0%	1.4%	-32.9%	7.1%	116.9%	-61.8%	167.0%	96.4%
S&P Latin America 40	5.0%	11.4%	-12.7%	-11.3%	13.9%	-6.0%	26.9%	32.5%	-30.9%	-11.1%	-12.3%	6.4%	-18.3%	16.7%	97.1%	-49.4%	50.5%	42.6%
Brazil (Bovespa)	-0.3%	4.7%	-11.9%	2.9%	31.6%	15.0%	26.9%	38.9%	-13.3%	-2.9%	-15.5%	7.4%	-18.1%	1.0%	82.7%	-41.2%	43.6%	32.9%
Mexico	8.6%	-9.0%	20.9%	1.2%	4.6%	-15.6%	8.1%	6.2%	-0.4%	1.0%	-2.2%	17.9%	-3.8%	20.0%	43.5%	-24.2%	11.7%	48.6%

S&P 500 Sectors	Q4'22	2022	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012	2011	2010	2009	2008	2007	2006
Consumer Discretionary	-10.2%	-37.0%	24.4%	33.3%	27.9%	0.8%	23.0%	6.0%	10.1%	9.7%	43.1%	23.9%	6.1%	27.7%	41.3%	-33.5%	-13.2%	18.6%
Consumer Staples	12.7%	-0.6%	18.6%	10.7%	27.6%	-8.4%	13.5%	5.4%	6.6%	16.0%	26.1%	10.8%	14.0%	14.1%	14.9%	-15.4%	14.2%	14.4%
Energy	22.8%	65.7%	54.6%	-33.7%	11.8%	-18.1%	-1.0%	27.4%	-21.1%	-7.8%	25.1%	4.6%	4.7%	20.5%	13.8%	-34.9%	34.4%	24.2%
Financials	13.6%	-10.5%	35.0%	-1.7%	32.1%	-13.0%	22.2%	22.8%	-1.5%	15.2%	35.6%	28.8%	-17.1%	12.1%	17.2%	-55.3%	-18.6%	19.2%
Healthcare	12.8%	-2.0%	26.1%	13.4%	20.8%	6.5%	22.1%	-2.7%	6.9%	25.3%	41.5%	17.9%	12.7%	2.9%	19.7%	-22.8%	7.2%	7.5%
Industrials	19.2%	-5.5%	21.1%	11.1%	29.4%	-13.3%	21.0%	18.9%	-2.5%	9.8%	40.7%	15.3%	-0.6%	26.7%	20.9%	-39.9%	12.0%	13.3%
Technology	4.7%	-28.2%	34.5%	43.9%	50.3%	-0.3%	38.8%	13.8%	5.9%	20.1%	28.4%	14.8%	2.4%	10.2%	61.7%	-43.1%	16.3%	8.4%
Materials	15.0%	-12.3%	27.3%	20.7%	24.6%	-14.7%	23.8%	16.7%	-8.4%	6.9%	25.6%	15.0%	-9.8%	22.2%	48.6%	-45.7%	22.5%	18.6%
Telecom	-1.4%	-39.9%	21.6%	23.6%	32.7%	-12.5%	-1.3%	23.5%	3.4%	3.0%	11.5%	18.3%	6.3%	19.0%	8.9%	-30.5%	11.9%	36.8%
Utilities	8.6%	1.6%	17.7%	0.5%	26.3%	4.1%	12.1%	16.3%	-4.8%	29.0%	13.2%	1.3%	19.9%	5.5%	11.9%	-29.0%	19.4%	21.0%

Blue to orange represents best to worst return for each period. Index data is total teturn.

Index Definitions

Index	Description
Equity	
S&P 500	Large US companies ($10b+ market cap)
S&P Mid Cap 400	Medium US companies ($5-10b market cap)
Russell 2000, S&P Small Cap 600	Small US companies (<$10b market cap)
MSCI Europe Australia Far East	Foreign Developed. Returns are in US$
MSCI Emerging Markets	Emerging Markets. Returns are in US$
Fixed Income	
Barclays Aggregate	Represents the entire US bond market
S&P 3mo Tbill	Short term Treasury Bills
Barclays 7-10yr Tsy	Ten Year Treasury Bonds
Barclays 10yr TIPS	Treasury Inflation Protected Securities
S&P Nat'l Muni	Municipal Bonds
BofA/ML Corp	Investment Grade (Higher Credit Quality) Corporate Bonds
BofA/ML High Yield	High Yield (Lower Credit Quality) Corporate Bonds
S&P Leveraged Loan 100	Floating Rate Bank Loans
BofA / ML EM Debt	Emerging Market Debt
Alternatives	
HFRI Fund of Funds	Represents the entire hedge fund universe

GRIMES
AND COMPANY

Disclosures

Please remember that past performance is no guarantee of future results. Different types of investments and/or investment strategies involve varying degrees of risk and volatility, and at any specific point in time, or over any specific time period, any investment or investment strategy can and will suffer losses, at times substantial losses. Positive performance should be considered secondary. If you cannot tolerate the volatility and risks associated with a specific strategy, Grimes & Company, Inc. ("Grimes") will introduce a different strategy to you for your consideration. Due to various factors, including changing market conditions and/or applicable laws, the content may no longer be reflective of current opinions or positions. Moreover, you should not assume that any discussion or information contained in this commentary serves as the receipt of, or as a substitute for, personalized investment advice from Grimes. To the extent that a reader has any questions regarding the applicability of any specific issue discussed above to his/her individual situation, he/she is encouraged to consult with the professional advisor of his/her choosing. Grimes is neither a law firm, nor a certified public accounting firm, and no portion of its services should be construed as legal or accounting advice. A copy of our current written disclosure Brochure discussing our advisory services and fees continues to remain available upon request or at www.grimesco.com. **Please Remember:** If you are a Grimes client, please contact Grimes, in writing, if there are any changes in your personal/financial situation or investment objectives for the purpose of reviewing / evaluating / revising our previous recommendations and/or services, or if you would like to impose, add, or to modify any reasonable restrictions to our investment advisory services. Unless, and until, you notify us, in writing, to the contrary, we shall continue to provide services as we do currently. **Please Note:** If you are a Grimes client, please advise us if you have NOT been receiving account statements (at least quarterly) from the account custodian. Historical performance results for investment indices, benchmarks, and/or categories have been provided for general informational/comparison purposes only, and generally do not reflect the deduction of transaction and/or custodial charges, the deduction of an investment management fee, nor the impact of taxes, the incurrence of which would have the effect of decreasing historical performance results. It should not be assumed that your Grimes account holdings correspond directly to any comparative indices or categories. **Please Also Note**: (1) performance results do not reflect the impact of taxes; (2) comparative benchmarks/indices may be more or less volatile than your Grimes accounts; and, (3) a description of each comparative benchmark/index is available upon request.

The information contained herein is based upon sources believed to be true and accurate. Sources include: *Factset Research Systems Inc.,* Bureau of Economic Analysis, Bureau of Labor Statistics, Congressional Budget Office, Board of Governors of Federal Reserve System, Fred: Federal Reserve Bank of St. Louis Economic Research, U.S. Department of the Treasury

-The Standard & Poor’s 500 is a market capitalization weighted index of 500 widely held domestic stocks often used as a proxy for the U.S. stock market. The Standard & Poor’s 400 is a market capitalization weighted index of 400 mid cap domestic stocks. The Standard & Poor’s 600 is a market capitalization weighted index of 600 small cap domestic stocks.
-The NASDAQ Composite Index measures the performance of all issues listed in the NASDAQ stock market, except for rights, warrants, units, and convertible debentures.
-The MSCI EAFE Index (Europe, Australasia, Far East) is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada. The MSCI Emerging Markets Index is a free float-adjusted market capitalization index that is designed to measure equity market performance of 21 emerging markets. The MSCI All Country World Index is a free float adjusted market capitalization index designed to measure the performance of large and mid and cap stocks in 23 developed markets and 24 emerging markets. With over 2,800 constituents it represents over 85% of the global equity market.
-The Barlcays Aggregate Index represents the total return performance (price change and income) of the US bond market, including Government, Agency, Mortgage and Corporate debt.
-The BofA Merrill Lynch Investment Grade and High Yield Indices are compiled by Bank of America / Merrill Lynch from the TRACE bond pricing service and intended to represent the total return performance (price change and income) of investment grade and high yield bonds.
-The S&P/LSTA U.S. Leveraged Loan 100 is designed to reflect the largest facilities in the leveraged loan market. It mirrors the market-weighted performance of the largest institutional leveraged loans based upon market weightings, spreads and interest payments.
-The S&P Municipal Bond Index is a broad, comprehensive, market value-weighted index. The S&P Municipal Bond Index constituents undergo a monthly review and rebalancing, in order to ensure that the Index remains current, while avoiding excessive turnover. The Index is rules based, although the Index Committee reserves the right to exercise discretion, when necessary.
-The BofA Merrill Lynch US Emerging Markets External Sovereign Index tracks the performance of US dollar emerging markets sovereign debt publicly issued in the US and eurobond markets.
-The HFRI Fund of Funds index is compiled by the Hedge Funds Research Institute and is intended to represent the total return performance of the entire hedge fund universe.