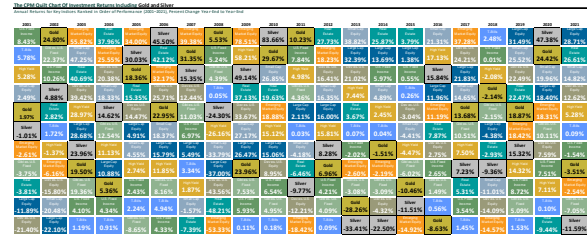


21 January 2022

## Gold and Silver In The Pantheon Of Investments

This report is about the relative performance of gold and silver as investment assets. It keys off of an “investment quilt chart” comparing annual returns across asset classes. Many investment firms publish such quilt charts, but CPM has never found one that included gold and silver. So, we built one using the nine asset classes commonly used in such tables but adding gold and silver. **The results are stunningly in favor of precious metals as an asset class.**

A lot of sell-side financial firms ignore gold and silver as key parts of diversified portfolios for various reasons. However, numerous quantitative studies regularly show that having gold and silver improves the performance of a diversified portfolio. Investing in gold and silver is in investors’ best interests. The CPM ‘quilt chart’ including gold and silver is seen to the right here in miniature. The expanded, readable version is on page three.



It turns out that the two precious metals combined have been the top performing asset measured as the percentage change at the end of each year from the end of the previous year 30% of the time in the 21 years from 2001 through 2021. They were in the Number 2 position 20% of the time and Number 3 another 20% of the time.

In 2020 Silver was the top performing asset, returning 47.4% and gold had the second-best return at 24.4%. They were Nos. 8 and 11 in 2021, but that is because they largely were holding onto the gains they had registered the previous year and in 2019, when gold had gained 18.9% and silver 15.3%.

<u>Asset Or Asset Class</u>	<u>Weighted Performance</u>
Gold	138
Silver	129
<b>Precious Metals (Gold and Silver)</b>	<b>267</b>
Small Cap Equity (Russell 2000)	149
Real Estate (REIT)	144
Large Cap Equity (SP500)	140
Emerging Market Equity (MSCI)	135
High Yield Bonds	132
Developed ex-US Equity (MSCI)	126
U.S. Fixed Income	113
Global ex-US Fixed Income	94
Cash (90-day T-Bill)	86

Source: CPM Group  
19 January 2022

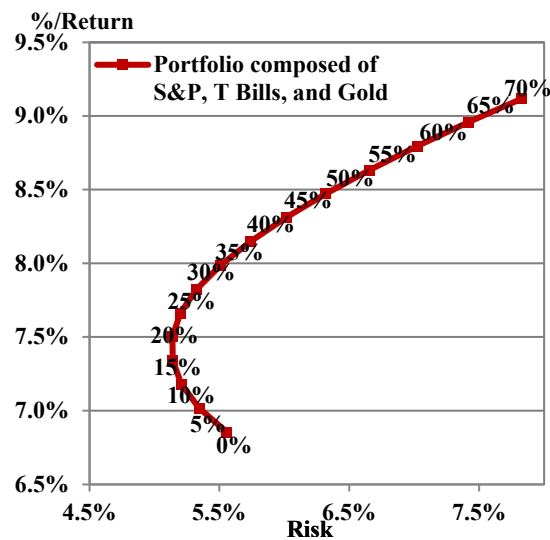
CPM calculated the relative performance throughout the entire 21-year period as well as looking at the individual years. Here, too, gold and silver shone brightly.

In this exercise gold and silver were examined separately. Measuring single assets such as gold and silver against indices of hundreds or thousands of individual assets is not fair to the single assets. **Even so, as individual assets gold and silver each show themselves to be highly competitive against the other nine asset classes included in the study.** Gold was only outperformed by U.S. large and small cap equity indices over the entire period. Silver was

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outperformed by five of the other asset classes, including gold. It outperformed five of the other asset classes in the study.

**Efficient Frontier of Portfolio with Gold -1968-2020**



**To make a fairer comparison CPM combined gold and silver into one sum, essentially Precious Metals. Doing that, precious metals blow away the other assets in terms of their weighted ranking over the past 21 years, as the table shows.**

Merely summing gold and silver together is not necessarily the most mathematically correct way to compare a precious metals index to indices of other asset classes. Averaging the two would mask the relative strengths of each. Creating a formal precious metals index requires subjective decisions to be made on the construction of such an index, including the weightings assigned gold and silver. CPM constructed two indices. The two indices confirmed that gold and silver combined as an asset class would have been highly competitive, in the top half of the various types of investments considered in the quilt chart.

One further interesting point to note is the fact that in many years the ranking was not so much in terms of relative returns but the relative size of

losses of value over the course of the year. The top two ranking performing asset classes registered positive returns in all 21 years. However, by the time you get to the third-tier ranking, you have the third top performer showing a loss in value in one year: 2018. At the 5<sup>th</sup> ‘best performing’ return ranking there are three years. Obviously overall returns deteriorate from there.

The conclusion is that gold and silver stack up very favorably to all other investment assets and deserve to have significant positions in diversified portfolios. CPM’s updates of Ibbotson and Associates’ work from the early 1980s on the optimal portion of a diversified portfolio that should be in gold show that the best risk:reward ratio of an overall portfolio has been 25% - 30% in gold from 1968 through 2020. The efficient frontier, as it is known, depicts the optimal asset allocation for gold coupled with a portfolio of the S&P index with T-bills.

### The CPM Quilt Chart Of Investment Returns Including Gold and Silver

Annual Returns for Key Indices Ranked in Order of Performance (2001-2024), Percent Change Year-End to Year-End

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
U.S. Fixed Income 8.43%	Gold 24.80%	Emerging Market Equity 55.82%	Real Estate 37.96%	Emerging Market Equity 34.00%	Silver 45.50%	Emerging Market Equity 39.38%	Gold 5.53%	Emerging Market Equity 78.51%	Silver 83.66%	Gold 10.23%	Real Estate 27.73%	Small Cap Equity 38.82%	Real Estate 25.87%	Real Estate 3.79%	Small Cap Equity 21.31%	Emerging Market Equity 37.28%	T-Bills 2.48%	Large Cap Equity 31.49%	Silver 47.38%	Large Cap Equity 28.71%
T-Bills 5.78%	Gbl ex-US. Fixed Income 22.37%	Small Cap Equity 47.25%	Emerging Market Equity 25.55%	Silver 30.03%	Real Estate 42.12%	Gold 31.35%	U.S. Fixed Income 5.24%	High Yield 58.21%	Gold 29.67%	U.S. Fixed Income 7.84%	Emerging Market Equity 18.23%	Large Cap Equity 32.39%	Large Cap Equity 13.69%	Large Cap Equity 1.38%	High Yield 17.13%	Dev ex-US. Equity 24.21%	U.S. Fixed Income 0.01%	Small Cap Equity 25.52%	Gold 24.42%	Real Estate 26.61%
High Yield 5.28%	U.S. Fixed Income 10.26%	Real Estate 40.69%	Dev ex-US. Equity 20.38%	Gold 18.36%	Emerging Market Equity 32.17%	Silver 15.35%	Gbl ex-US. Fixed Income 4.39%	Silver 49.14%	Small Cap Equity 26.85%	High Yield 4.98%	Dev ex-US. Equity 16.41%	Dev ex-US. Equity 21.02%	U.S. Fixed Income 5.97%	U.S. Fixed Income 0.55%	Silver 15.84%	Large Cap Equity 21.83%	High Yield -2.08%	Dev ex-US. Equity 22.49%	Small Cap Equity 19.96%	Small Cap Equity 14.82%
Small Cap Equity 2.49%	Silver 4.88%	Dev ex-US. Equity 39.42%	Small Cap Equity 18.33%	Real Estate 15.35%	Dev ex-US. Equity 25.71%	Dev ex-US. Equity 12.44%	T-Bills 0.05%	Real Estate 37.13%	Real Estate 19.63%	Gbl ex-US. Fixed Income 4.36%	Small Cap Equity 16.35%	High Yield 7.44%	Small Cap Equity 4.89%	T-Bills 0.26%	Large Cap Equity 11.96%	Small Cap Equity 14.65%	Gold -2.14%	Real Estate 22.47%	Large Cap Equity 18.40%	Dev ex-US. Equity 12.62%
Gold 1.97%	Real Estate 2.82%	High Yield 28.97%	Silver 14.62%	Dev ex-US. Equity 14.47%	Gold 22.95%	Gbl ex-US. Fixed Income 11.03%	Silver -24.30%	Dev ex-US. Equity 33.67%	Emerging Market Equity 18.88%	Large Cap Equity 2.11%	Large Cap Equity 16.00%	Real Estate 3.67%	High Yield 2.45%	Dev ex-US. Equity -3.04%	Emerging Market Equity 11.19%	Gold 13.68%	Gbl ex-US. Fixed Income -2.15%	Gold 18.87%	Emerging Market Equity 18.31%	High Yield 5.28%
Silver -1.01%	T-Bills 1.72%	Large Cap Equity 28.68%	Gbl ex-US. Fixed Income 12.54%	Large Cap Equity 4.91%	Small Cap Equity 18.37%	U.S. Fixed Income 6.97%	High Yield -26.16%	Small Cap Equity 27.17%	High Yield 15.12%	T-Bills 0.03%	High Yield 15.81%	T-Bills 0.07%	T-Bills 0.04%	Small Cap Equity -4.41%	Real Estate 7.87%	Gbl ex-US. Fixed Income 10.51%	Large Cap Equity -4.38%	Emerging Market Equity 18.42%	Gbl ex-US. Fixed Income 10.11%	T-Bills 0.09%
Emerging Market Equity -2.61%	High Yield -1.37%	Silver 23.96%	High Yield 11.13%	Small Cap Equity 4.55%	Large Cap Equity 15.79%	Large Cap Equity 5.49%	Small Cap Equity -33.79%	Large Cap Equity 26.47%	Large Cap Equity 15.06%	Small Cap Equity -4.18%	Silver 8.28%	U.S. Fixed Income -2.02%	Gold -1.51%	High Yield -4.47%	Dev ex-US. Equity 2.75%	High Yield 7.50%	Real Estate -2.93%	Silver 15.32%	Dev ex-US. Equity 7.59%	U.S. Fixed Income -1.54%
Gbl ex-US. Fixed Income -3.75%	Emerging Market Equity -6.16%	Gold 19.50%	Large Cap Equity 10.88%	High Yield 2.74%	High Yield 11.85%	T-Bills 3.34%	Large Cap Equity -37.00%	Gold 23.96%	Dev ex-US. Equity 8.95%	Real Estate -6.46%	Gold 6.96%	Emerging Market Equity -2.60%	Emerging Market Equity -2.19%	Gbl ex-US. Fixed Income -6.07%	U.S. Fixed Income 2.65%	Silver 7.23%	High Yield 14.32%	High Yield 7.51%	U.S. Fixed Income 7.51%	Gold -3.51%
Real Estate -3.81%	Dev ex-US. Equity -15.80%	Gbl ex-US. Fixed Income 19.36%	Gold 5.36%	U.S. Fixed Income 2.43%	Gbl ex-US. Fixed Income 8.16%	High Yield 1.87%	Dev ex-US. Equity -43.56%	Gbl ex-US. Fixed Income 7.53%	U.S. Fixed Income 6.54%	Silver -9.77%	U.S. Fixed Income 4.21%	Gbl ex-US. Fixed Income -3.08%	Gbl ex-US. Fixed Income -3.09%	Dev ex-US. Equity -10.46%	Gbl ex-US. Fixed Income 1.49%	Real Estate 5.31%	Small Cap Equity -11.01%	U.S. Fixed Income 8.72%	High Yield 7.11%	Emerging Market Equity -2.54%
Large Cap Equity -11.89%	Small Cap Equity -20.48%	U.S. Fixed Income 4.10%	U.S. Fixed Income 4.34%	T-Bills 2.24%	T-Bills 4.94%	Small Cap Equity -1.57%	Real Estate -48.21%	U.S. Fixed Income 5.93%	Gbl ex-US. Fixed Income 4.95%	Dev ex-US. Equity -12.21%	Gbl ex-US. Fixed Income 4.09%	Gold -28.26%	Dev ex-US. Equity -4.32%	Silver -11.51%	T-Bills 0.56%	U.S. Fixed Income 3.54%	Dev ex-US. Equity -14.09%	Gbl ex-US. Fixed Income 5.09%	T-Bills 0.10%	Gbl ex-US. Fixed Income -7.05%
Dev ex-US. Equity -21.40%	Large Cap Equity -22.10%	T-Bills 1.19%	T-Bills 0.91%	Gbl ex-US. Fixed Income -8.65%	U.S. Fixed Income 4.33%	Real Estate -7.39%	Emerging Market Equity -53.33%	T-Bills 0.11%	T-Bills 0.18%	Emerging Market Equity -18.42%	T-Bills 0.09%	Silver -33.41%	Silver -22.50%	Emerging Market Equity -14.92%	Gold -8.63%	T-Bills 1.45%	Emerging Market Equity -14.57%	Large Cap Equity 1.53%	Real Estate -9.44%	Silver -11.59%



**Sources: Bloomberg, CPM Group.**

**Large Cap Equity - S&P 500**

**Small Cap Equity - Russell 2000**

**Developed ex-U.S. Equity - MSCI World ex USA,**

**Emerging Market Equity - MSCI Emerging Markets**

**U.S. Fixed Income - Bloomberg Barclays US Aggregate Bond Index,**

**High Yield - Bloomberg Barclays High Yield Bond Index**

**Global ex-U.S. Fixed Income - Bloomberg Barclays Global Aggregate ex US Bond Index,**

**Real Estate - FTSE EPRA Nareit Developed REIT Weighted Net Total Return Index**

**T-bill - 90 Day.**

**Gold and Silver, Comex Nearby Active Contracts**

**Annual Returns are percent changes year-end to year-end. T-Bills are year-end.**