# Correlations and volatility

| | U.S. Large Cap | EAFE | EME | Bonds | Corp. HY | Munis | Currcy. | EMD | Cmdty. | REITs | Hedge funds | Private equity | Gold | Ann. Volatility |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **U.S. Large Cap** | 1.00 | 0.89 | 0.76 | 0.25 | 0.85 | 0.34 | -0.42 | 0.68 | 0.43 | 0.77 | 0.84 | 0.79 | 0.09 | 0.15 |
| **EAFE** | | 1.00 | 0.90 | 0.24 | 0.87 | 0.37 | -0.57 | 0.75 | 0.47 | 0.64 | 0.86 | 0.82 | 0.17 | 0.15 |
| **EME** | | | 1.00 | 0.30 | 0.82 | 0.42 | -0.69 | 0.80 | 0.49 | 0.52 | 0.76 | 0.76 | 0.37 | 0.18 |
| **Bonds** | | | | 1.00 | 0.37 | 0.86 | -0.35 | 0.66 | -0.18 | 0.41 | -0.02 | -0.08 | 0.56 | 0.04 |
| **Corp. HY** | | | | | 1.00 | 0.45 | -0.49 | 0.86 | 0.50 | 0.68 | 0.81 | 0.72 | 0.26 | 0.08 |
| **Munis** | | | | | | 1.00 | -0.34 | 0.74 | -0.12 | 0.55 | 0.14 | 0.16 | 0.47 | 0.04 |
| **Currencies** | | | | | | | 1.00 | -0.57 | -0.44 | -0.20 | -0.32 | -0.53 | -0.55 | 0.06 |
| **EMD** | | | | | | | | 1.00 | 0.29 | 0.61 | 0.57 | 0.54 | 0.50 | 0.08 |
| **Commodities** | | | | | | | | | 1.00 | 0.32 | 0.62 | 0.58 | 0.34 | 0.17 |
| **REITs** | | | | | | | | | | 1.00 | 0.59 | 0.54 | 0.17 | 0.16 |
| **Hedge funds** | | | | | | | | | | | 1.00 | 0.81 | 0.03 | 0.05 |
| **Private equity** | | | | | | | | | | | | 1.00 | 0.04 | 0.08 |
| **Gold** | | | | | | | | | | | | | 1.00 | 0.15 |

Source: Bloomberg, Burgiss, Credit Suisse/Tremont, FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
Indices used – Large Cap: S&P 500 Index; Currencies: Federal Reserve Trade-Weighted Dollar; EAFE: MSCI EAFE; EME: MSCI Emerging Markets; Bonds: Bloomberg Aggregate; Corp HY: Bloomberg Corporate High Yield; EMD: Bloomberg Emerging Market; Cmdty.: Bloomberg Commodity Index; REITs: NAREIT All Equity Index; Hedge funds: CS/Tremont Hedge Fund Index; Private equity: Time weighted returns from Burgiss; Gold: Gold continuous contract ($/oz). Private equity data are reported on a one- to two-quarter lag. All correlation coefficients and annualized volatility are calculated based on quarterly total return data for period from 9/30/2012 to 9/30/2022, except for Private equity, which is based on the period from 3/31/2012 to 3/31/2022. This chart is for illustrative purposes only.
*Guide to the Markets – U.S.* Data are as of September 30, 2022.

J.P.Morgan ASSET MANAGEMENT