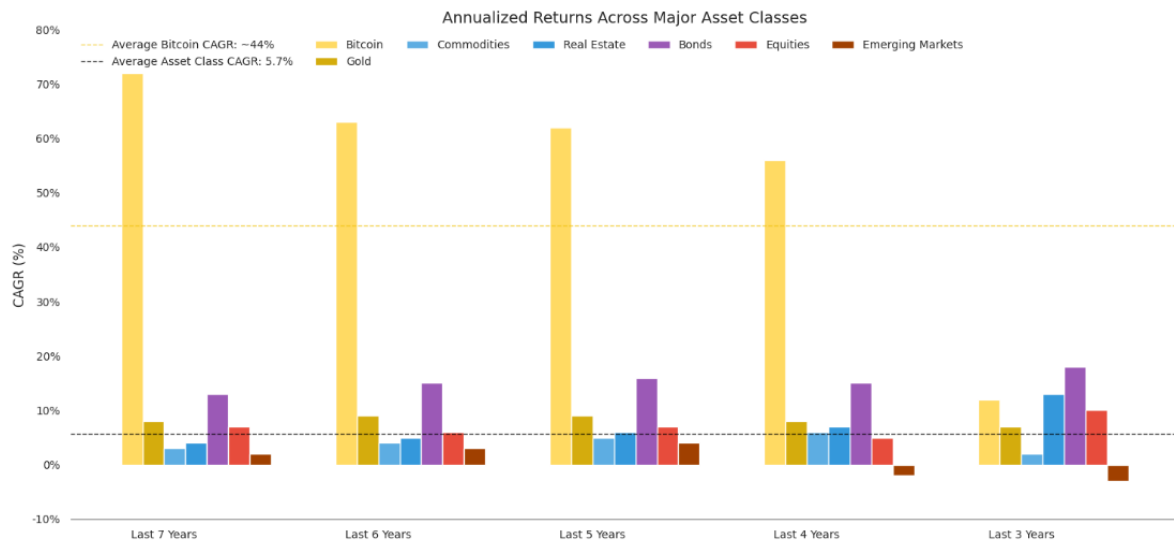


## How to interpret clustered bar chart over time for multivariate analysis



### A. Understanding the Components of a Clustered Bar Chart Over Time:

- **Horizontal Axis (X-axis):** Represents the different "Time Horizons" considered: Last 7 Years, Last 6 Years, Last 5 Years, Last 4 Years, and Last 3 Years. These represent different periods ending at the same point in time.
- **Vertical Axis (Y-axis):** Represents the "Annualized Returns (CAGR %)," showing the percentage of compound annual growth rate.
- **Clusters of Bars:** For each "Time Horizon" on the x-axis, there is a cluster of bars. Each bar within the cluster represents a different "Major Asset Class":
  - Gold (Yellow)
  - Bitcoin (Dark Yellow)
  - Commodities (Light Blue)
  - Real Estate (Blue)
  - Bonds (Purple)
  - Equities (Red)

- Emerging Markets (Brown)
- **Legend:** The legend at the top clarifies which color corresponds to each asset class.
- **Reference Lines:**
  - A horizontal dashed yellow line represents the "Average Bitcoin CAGR: ~44%."
  - A horizontal dashed black line represents the "Average Asset Class CAGR: 5.7%."

## B. Interpreting the Annualized Returns Across Asset Classes Over Time:

By examining the clusters of bars for each time horizon, we can compare the performance of different asset classes:

- **Bitcoin (Dark Yellow Bars):** Shows exceptionally high annualized returns across all time horizons compared to other asset classes. However, the returns have decreased significantly as the time horizon shortens (from ~72% over the last 7 years to ~55% over the last 3 years). The yellow dashed line provides a visual reference for Bitcoin's overall average CAGR.
- **Gold (Yellow Bars):** Shows relatively stable but lower annualized returns across all time horizons, generally staying below 10%.
- **Commodities (Light Blue Bars):** Shows fluctuating returns, with relatively higher returns in the longer time horizons (Last 7 and 6 Years) and lower returns in the shorter horizons.
- **Real Estate (Blue Bars):** Shows relatively consistent positive returns across all time horizons, generally in the range of 10-15%.
- **Bonds (Purple Bars):** Shows relatively consistent positive returns across all time horizons, generally in the range of 10-16%, performing similarly to Real Estate.
- **Equities (Red Bars):** Shows positive returns across all time horizons, with some variability. The returns are generally higher in the longer time horizons.
- **Emerging Markets (Brown Bars):** Shows fluctuating returns, with positive returns in the longer time horizons but negative returns in the shortest horizon (Last 3 Years).

- **Comparison to Averages:**
  - Bitcoin's performance significantly outperforms the average asset class CAGR (black dashed line) across all time horizons.
  - Most other asset classes show returns closer to or above the average asset class CAGR, with Gold consistently below it.
- **Trends Over Time:** For each asset class, we can observe how its annualized return has changed as the time horizon shortens. For example, Bitcoin's CAGR has decreased, while the returns of some other asset classes show more stability or different patterns of change.

**This type of clustered bar chart is excellent when you want to:**

- Compare the performance (or values) of multiple categories (asset classes) across different time periods (time horizons).
- Show how the relative performance of different categories changes over time. We can see how Bitcoin's dominance in returns has evolved over different periods.
- Facilitate direct comparison of different categories within the same time period. For each time horizon, it's easy to compare the height of the bars for different asset classes.
- Visualize trends and stability (or volatility) of different categories over time. Relatively consistent bar heights for an asset class across time horizons suggest more stable returns.
- Present a clear comparison of multiple entities across a common temporal dimension.

In summary, this clustered bar chart over time effectively visualizes the performance of different asset classes across various time horizons, allowing for easy comparison of both the relative performance within each time period and the trends in performance for each asset class over time. The reference lines provide additional context by comparing individual and average performance.