
PORTFOLIO DIVERSIFICATION ENIGMA

Varun Dawar wrote this case solely to provide material for class discussion. The author does not intend to illustrate either effective or ineffective handling of a managerial situation. The author may have disguised certain names and other identifying information to protect confidentiality.

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In early January 2013, Kunal Kaushesh, product manager with one of the leading insurance companies in Gurgaon, Delhi, sat in his home office and pondered the investment strategy he had followed for his personal portfolio over the last three years. Kaushesh had passively allocated his entire investable funds in exchange traded funds, tracking the S&P CNX Nifty Index and the CNX Bank Index in the ratio of 60 per cent and 40 per cent respectively. The S&P CNX Nifty Index, a free-floated weighted index, consisted of 50 stocks chosen for market size, liquidity, domicile and industry grouping, among other factors, and represented large, well-established and financially sound companies across key sectors. The CNX Bank Index consisted of 12 stocks chosen to reflect the risk/return characteristics of the liquid and large-cap Indian banking sector. Similar to the S&P CNX Nifty Index, the CNX Bank Index was maintained using the free-floating market capitalization method. While this investment strategy of an all-equity portfolio had worked well in the past three years, Kaushesh was worried about the impending risks it might encounter in terms of both global and local macroeconomic events in the near future. Globally, there were talks of tapering off the Quantitative Easing Program undertaken by the U.S. Federal Reserve in the aftermath of the global financial crisis in 2008. Locally, India was due for general elections in May 2014. Kaushesh feared that both these events could have an adverse effect on financial markets, particularly equity, thereby exposing his portfolio to a prolonged period of volatility.

DIVERSIFICATION PROBLEM

In order to protect his portfolio against amplified volatility in financial markets and to achieve higher risk-adjusted returns, Kaushesh had been considering diversifying his all-equity portfolio to include gold as an asset class. During his MBA program days, Kaushesh had learned that the risk (or variance) of a portfolio was not simply a weighted average sum of individual variances of the assets it comprised. Rather, the important component that determined portfolio risk was the co-movement (or cross-correlation) between the particular asset return and returns of other constituents of the portfolio. Consequently, he reasoned that portfolio diversification could lower risk by including assets whose returns were imperfectly correlated with the existing constituents of the portfolio.

GOLD AS AN ASSET CLASS

Over the past decade (2002 to 2012), gold as an asset class had seen a phenomenal rise and experienced almost 438 per cent appreciation¹ in its spot prices. In the past, investment in gold had served as a hedge during periods of deflation as well as extreme inflation. In a high inflation environment, gold investment ensured protection against the erosion of the real purchasing power of paper currency; during periods of global deflation or depression, it served as a hedge against paper currency debasement and financial counterparty failures. Overall, gold had maintained its historical power as a well-rounded hedge during periods of deflation, macroeconomic shocks, geopolitical instability and hyperinflation and reduced vulnerability of investments towards tail risks. As per a World Gold Council report,² gold had exhibited very low correlation to most assets over the long run, thereby reducing portfolio volatility and minimizing losses.

Kaushesh believed that gold could serve as a hedge against his all-equity portfolio during times of financial crisis and falling stock prices and improve his risk-adjusted returns. However, he wanted to begin conservatively by allocating only 20 per cent of his portfolio to this new asset class. Further, Kaushesh wanted to determine whether expected return on the diversified portfolio would adequately compensate for the additional risk of taking on the new asset class. For this, he needed to test the data by using past returns, standard deviations and correlations and then compare the risk-adjusted returns of the diversified portfolio (comprising gold and equity) vis-à-vis an all-equity portfolio. To do this, he decided to use the Sharpe Ratio, developed by Nobel Laureate William Sharpe, which measured the portfolio's excess returns relative to the total risk undertaken to generate that return.

HISTORICAL DATA

For collecting the data related to the past decade's annual returns for the S&P CNX Nifty Index, CNX Bank Index and gold, Kaushesh referred to the National Stock Exchange (NSE) of India and World Gold Council websites where the historical prices were listed (see Exhibit 1). For the risk-free rate, Kaushesh referred to the Reserve Bank of India website where government treasury securities prices and yields were traded. On December 30, 2012, the India Treasury Bond 10-year yield was rated at 8.11 per cent.³ Data on weights of asset classes before and after the addition of the new asset class of gold can be found in Exhibit 2.

¹ World Gold Council, "Gold Price in a Range of Currencies Since December 1978 — XLS version," May 12, 2014, www.gold.org/research/gold-price-range-currencies-december-1978-xls-version, accessed June 17, 2014.

² World Gold Council, "Gold Investor: Risk Management and Capital Preservation — Volume 1," January 31, 2013, www.gold.org/research/gold-investor-risk-management-and-capital-preservation-volume-1, accessed June 17, 2014.

³ Reserve Bank of India, "Database on Indian Economy," <http://dbie.rbi.org.in/DBIE/dbie.rbi?site=publications>, accessed April 10, 2014.

EXHIBIT 1: ASSET CLASS ANNUAL RETURNS (IN PER CENT)

In December	S&P CNX Nifty Index	CNX Bank Index	Gold
2003	72	110	17
2004	10	33	13
2005	38	33	9
2006	41	33	36
2007	53	63	15
2008	-51	-49	25
2009	74	78	12
2010	18	29	26
2011	-24	-31	28
2012	28	57	6

Source: National Stock Exchange, www.nseindia.com/products/content/equities/indices/indices.htm, accessed June 17, 2014; World Gold Council, "Gold Price in a Range of Currencies since December 1978 -XLS Version," www.gold.org/research/gold-price-range-currencies-december-1978-xls-version, accessed June 17, 2014.

EXHIBIT 2: ASSET CLASS WEIGHTS (IN PER CENT)

Asset Class	Before Addition of New Asset Class	After Addition of New Asset Class
S&P CNX Nifty Index	60	50
CNX Bank Index	40	30
Gold	0	20

Source: Created by author.