W16027

LYXOR CHINAH VERSUS LYXOR MSINDIA: PORTFOLIO RISK AND RETURN[1]

Ruth S. K. Tan, Zsuzsa R. Huszár, and Weina Zhang wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

On a Saturday morning in late September 2015, Susie sat over her breakfast, which was rapidly turning cold, and reflected on the performance of her personal investment portfolio over the past seven years. She recalled that, after the financial crisis in 2008, she had been advised to avoid U.S. stocks and to put her savings in the emerging economies of India and China. At the time, she had chosen to allocate her funds to two exchange traded funds (ETF) invested in the equity markets of India and China, namely Lyxor ChinaH and Lyxor MSIndia, in the ratio of 60 per cent and 40 per cent respectively.

Lyxor ChinaH was an ETF invested in the public equity markets of China. The ETF invested in the stocks of large-cap companies operating across diversified sectors.[2]

Lyxor MSIndia was an ETF that invested in the public equity markets of India. The ETF invested in the stocks of large-cap and mid-cap companies operating across diversified sectors, and tracked the performance of the Morgan Stanley Capital International (MSCI) India Index.[3]

Although Susie had been satisfied with her portfolio performance over the past seven years, the high growth in these two emerging markets had fizzled out lately. However, the advice she had gathered from analysts' reports implied that she should stay invested in these markets, albeit with more attention to the volatile swings.

PORTFOLIO DIVERSIFICATION

Susie had enrolled in a corporate finance class on risk and return to improve her investment knowledge. During her classes, Susie learned that the risk of a portfolio was not simply a weighted average of the individual variances of the component assets. Rather, it was determined to a large extent by the co-

[1] This case has been written on the basis of published sources only. Consequently, the interpretation and perspectives presented in this case are not necessarily those of Lyxor or any of its employees.
[2] Bloomberg L.P., "Company Overview of Lyxor UCITS ETF China Enterprise (HSCEI)," Bloomberg Database, accessed September 22, 2015, www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=33174726.
[3] Bloomberg L.P., "INR Quote — Lyxor ETF MSCI India USD Fund," Bloomberg Database, accessed September 22, 2015, www.bloomberg.com/quote/INR:SP.

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movement between the returns of the component assets. Consequently, Susie reasoned that diversification to include an asset that was imperfectly correlated with the existing components of her portfolio should reduce her risk without sacrificing returns, if she had understood correctly.

With this objective in mind, Susie started to search for an asset that was not correlated with Lyxor ChinaH or Lyxor MSIndia.

THE RECOVERING U.S. EQUITY MARKET

Susie wondered whether she should move some of her funds to U.S. equity. The U.S. economy appeared to have benefitted from the rounds of quantitative easing and was finally recovering from the doldrums. The U.S. unemployment data had improved and there was speculation that the Federal Reserve might raise interest rates.[4] Surely, the fact that the United States was picking up at a time when China and India were slowing down was indicative of low correlation among the three economies.

FINANCIAL ANALYSIS

To confirm her belief, Susie decided to pick an ETF that tracked the U.S. equity market. She noticed that Lyxor United States Dow Jones Industrial Average (USDJIA) was invested in the public equity markets of the United States, in the stocks of companies operating across diversified sectors, excluding transportation and utilities sectors.[5]

She proceeded to gather past return data on Lyxor ChinaH, Lyxor MSIndia, and Lyxor USDJIA (see Exhibit 1). All three ETFs were listed on the Singapore Exchange. As a proxy for the market portfolio, Susie downloaded corresponding return data for Lyxor World (see Exhibit 1).

Lyxor World was an ETF that invested in the public equity markets of developed countries across the globe. It invested in the stocks of large-cap and mid-cap companies, and provided results that closely corresponded to the performance of the MSCI World Index.[6]

Susie's idea was to compare the mean returns and standard deviations of her existing portfolio with an alternative portfolio that would invest 40 per cent in China, 30 per cent in India, and 30 per cent in United States (see Exhibit 2). She hoped that the analysis would help her decide whether to diversify her portfolio or remain invested in China and India only.

In addition, she intended to compute the betas of Lyxor ChinaH, Lyxor MSIndia, and Lyxor USDJIA using their covariance with the market proxy, which would help her figure out their required returns, assuming a risk-free rate of 2.5 per cent and a market risk premium of 5.5 per cent. From there, she would be able to describe the systematic risk of her existing portfolio and the new portfolio, and their corresponding required returns.

Susie was excited to get started and to apply the financial concepts that she had gleaned from her corporate finance class. The class might have turned out to be her best investment yet.

[4] Jon Hilsenrath and Ben Leubsdorf, "Janet Yellen Expects Interest Rate Increase This Year," *The Wall Street Journal,* September 24, 2015, accessed January 15, 2016, www.wsj.com/articles/janet-yellen-says-fed-interest-rate-increase-still-likely-this-year-1443128438.
[5] Bloomberg L.P., "Company Overview of Lyxor UCITS ETF Dow Jones Industrial Average," Bloomberg Database, accessed September 22, 2015, www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=33174802.
[6] Bloomberg L.P., "Company Overview of Lyxor UVITS ETF MSCI World," Bloomberg Database, accessed September 22, 2015, www.bloomberg.com/research/stocks/private/snapshot.asp?privcapId=35421674.

EXHIBIT 1: ANNUAL RETURNS (%)

	Lyxor ChinaH	Lyxor MSIndia	Lyxor USDJIA	Lyxor World
2009	2.00	5.86	5.56	7.69
2010	4.25	22.40	6.11	5.79
2011	-29.40	-27.07	7.94	-3.28
2012	13.23	0.60	18.29	20.75
2013	8.86	-6.84	17.09	14.14
2014	2.31	33.87	14.20	15.06
2015	-2.96	-9.28	-4.71	-4.28

Source: Created by the authors using data from:
Yahoo Southeast Asia Pte Ltd, Lyxor UCITS ETF China Enterprise (HSCEI) (P58.SI) – Historical Prices, https://sg.finance.yahoo.com/q/hp?s=P58.SI;
Yahoo Southeast Asia Pte Ltd, Lyxor UCITS ETF MSCI India (G1N.SI) – Historical Prices, https://sg.finance.yahoo.com/q/hp?s=G1N.SI;
Yahoo Southeast Asia Pte Ltd, Lyxor UCITS ETF Dow Jones Industrial Average (JC6.SI) – Historical Prices, https://sg.finance.yahoo.com/q/hp?s=JC6.SI;
Yahoo Southeast Asia Pte Ltd, Lyxor UCITS ETF MSCI World (H1P.SI) – Historical Prices," https://sg.finance.yahoo.com/q/hp?s=H1P.SI, all accessed on September 22, 2015.

EXHIBIT 2: PORTFOLIO WEIGHTS (%)

Assets	Existing Portfolio Weights	New Portfolio Weights
Lyxor ChinaH	60	40
Lyxor MSIndia	40	30
Lyxor USDJIA		30

Note: Susie's existing portfolio weights in Lyxor ChinaH and Lyxor MSIndia are 60 per cent and 40 per cent respectively. She would like to compare the mean returns and standard deviations of her existing portfolio with those of a portfolio that was invested 40 per cent in Lyxor ChinaH, 30 per cent in Lyxor MSIndia, and 30 per cent in Lyxor USDJIA.

Source: Based on case information.