Exchange-Traded Funds Portfolio Allocation

Research by:
Finance Class 684
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Objective: To construct a portfolio consisting of a combination of exchange-traded funds (ETFs) that will maintain our investment with moderate growth and limited risk.

Executive Summary

The key to our allocation decisions was the importance of diversification. By investing in securities concentrating on various industries in different regions and countries, we are attempting to limit the risk of the portfolio, while delivering moderate growth returns. A mix of both foreign and domestic ETFs enables us to take advantage of opportunities both home and abroad.

Our investments (both domestic and overseas) were spread across equities with different risk profiles and market capitalizations. Our U.S.-based equity holdings, which account for 55% of the portfolio, are heavily weighted in larger-capitalization S&P 500 companies. This helps to limit the portfolio's risk profile. On the international front, our investments ranged from emerging-market companies in Eastern Europe, Asia and Latin America to more established entities in Western Europe.

We put our required 20% fixed-income allocation into short-term U.S. treasury securities to help limit risk and take advantage of current market conditions that appear to favor short-term fixed-income instruments.

After extensive research, we have decided to include the following ETFs in our portfolio:

20% - iShares Lehman 1-3 Year Treasury Bond Fund (SHY)
15% - iShares Russell 2000 Index Fund (IWM)
40% - SPDR Trust Series 1 (SPY)
10% - iShares MSCI Emerging Market Index (EEM)
15% - Vanguard European ETF (VGK)

Fixed-Income ETF (20% of Net Assets)

<u>iShares Lehman 1-3 Year Treasury Bond Fund (SHY)</u>

The iShares Lehman 1-3 Year Treasury Bond Fund, issued by Barclays Global Investors (BGI), was our choice for fixed-income exposure. The fund seeks results that correspond to the yield performance of the Lehman 1-3 Treasury Bond Index. This ETF, which invests 95% of its assets in U.S. government bonds, is currently trading at $79.82, slightly below its 52-week high of $80.45. SHY has 70.9 million shares outstanding and a total net asset value of nearly $5.7 billion. The fund's 52-week market return, as of February 2nd, was 4.0%. This bond ETF pays a monthly dividend, which has risen at an attractive annual clip since 2002. The fund paid $3.30 of ordinary income in 2006. We also like that the ETF's distribution is paid in the form of ordinary income. An ordinary income dividend is more appealing to investors than either short- or long-term capital distribution because it is taxed at a lower rate.

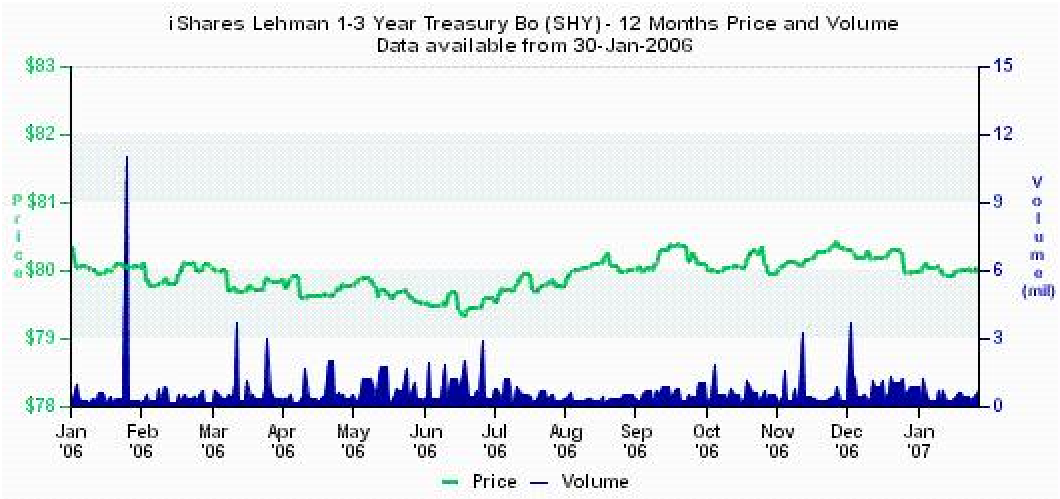
There are a few other advantages to investing in fixed-income ETFs, including the ability to diversify your portfolio, while at the same time receiving a steady stream of monthly income. A fixed-income ETF is also less risky than investing in one or two individual corporate bonds. The expense ratios often tend to be much lower than those associated with a typical bond mutual fund.

Risk Profile

A short-term bond ETF typically performs best during a bear market. It also tends to carry less risk than the longer-duration bond funds. Although this fund is unlikely to offer fabulous annualized returns during the best of times, it does offer protection for risk-averse accounts if the market was to take a turn for the worse. This is the primary reason why we feel it would be prudent to invest 20% of the allotted funds here. The presence of a short-term bond ETF helps to lower the risk of an ETF portfolio that is heavily weighted in equities.

The iShares Lehman 1-3 Year Treasury Bond is probably the most risk-averse ETF available to the investment community. It invests in short-term fixed-income government securities, which are fully backed by the United States government. This ETF’s current standard deviation is a miniscule 1.27%, while its beta coefficient is .34. Provided below is a list of the top-10 bond holdings in this low risk fixed-income ETF.

Top Ten Holdings as of 2/1/07	**Position**	**% Net**
U.S. Treasury Note 3.75% 5/15/08	940	11.912
U.S. Treasury Note 4.875% 8/15/09	560	7.091
U.S. Treasury Note 4.125% 8/15/08	502	6.385
U.S. Treasury Note 3.0% 2/15/08	409	5.114
U.S. Treasury Note 2.625% 5/15/08	392	4.778
U.S. Treasury Note 4.75% 11/15/08	351	4.472
U.S. Treasury Note 3.25% 1/15/09	356	4.414
U.S. Treasury Note 4.875% 5/15/09	350	4.404
U.S. Treasury Note 2.625% 3/15/09	352	4.178
U.S. Treasury Note 4.5% 2/15/09	314	3.937



U.S.-Denominated ETFs (55%)

<u>iShares Russell 2000 Index Fund (IWM)</u>

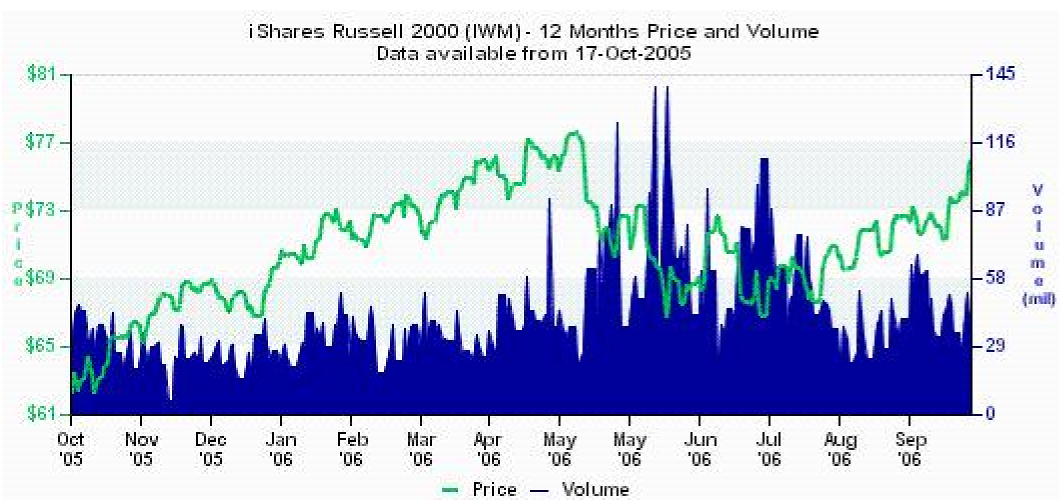
We chose this particular ETF because it invests in U.S. smaller-capitalization stocks. Its performance generally mimics that of the Russell 2000 Index. The iShares Russell 2000 Index Fund currently trades near its 52-week high of $80.47. It has 119 million outstanding shares and net assets of over $9 billion.

With the decision to allocate 55% of portfolio in U.S.-based ETFs, we chose to diversify amongst the large-cap, mid-cap and small-cap sectors. This fund is heavily invested in small-cap equities. It represents the "growth" portion of our stock allocations in comparison with our more secure investment in the SPDR Trust Series 1. Through analysis of our existing 15-stock graduate portfolio, our analysts found it to be lacking exposure to the financial sector, which has and will likely continue to benefit from an aging "baby boomer" generation. This group is looking for a haven for its accumulated wealth, which financial services companies can provide. The fact that the Russell 2000 Index Fund (IWM) invests 22.8% of its total portfolio in the financial services sector was a driving force behind our decision to choose this ETF. One area of concern that may arise, particularly given the uncertainty of the direction of the United States economy in 2007, is the fund's large investment allocation in the consumer discretionary sector. All in all, we believe this iShares Russell 2000 Index Fund remains a solid choice for the next six- to 12-month period and offers a nice contrast to our heavily weighted position in U.S. large-cap equities.

Risk Profile

This ETF represents the riskier portion of our U.S.-based stock market exposure. The fund invests in small-cap equities, which carry more risk than their larger-cap brethren. The risk for this fund is that if the Federal Reserve opts to raise rates, small companies will likely suffer more than large companies. The smaller-sized companies have relatively less cash on their balance sheets and the ability to raise new capital via the bond becomes more difficult. The higher financing costs also have a more severe impact on their profitability margins. This ETF's risk profile is much greater than the S&P 500 average. Its beta coefficient and standard deviation is 1.75 and 13.8%, respectively. Both these risk measures are far greater than those of a typically S&P 500 fund.

Top Ten Holdings as of 1/30/07	Position	% Net
Brocade Communications	3005784	0.247
Time Warner Telecom In	1080408	0.242
Alexandria Real Estate	222360	0.233
Phillips-Van Heusen	421176	0.224
Hologic Inc.	400248	0.219
Polycom Inc.	664464	0.217
Big Lots Inc.	860664	0.215
Realty Income Corp.	761256	0.211
NBTY Inc.	421176	0.209
Navistar International	473496	0.206



<u>SPDR Trust Series 1 (SPY)</u>

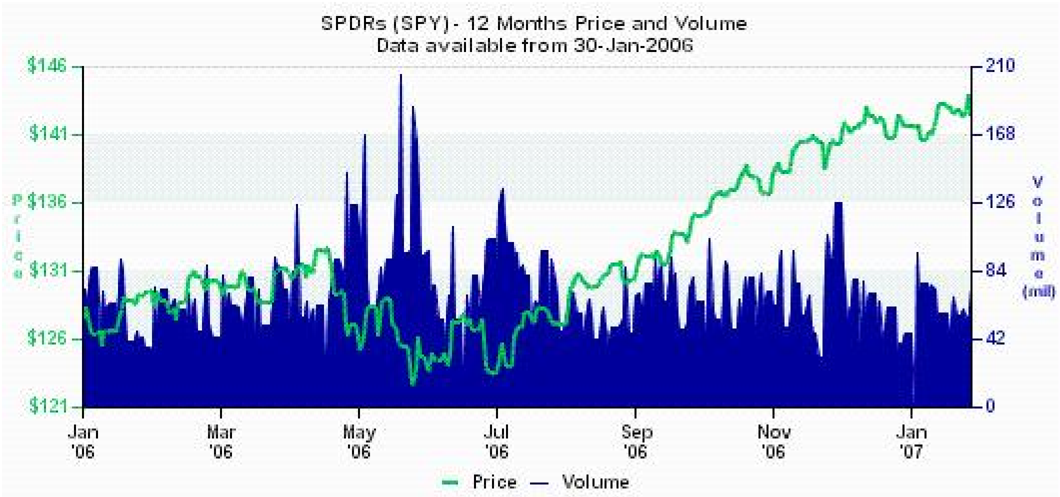
SPDRs, Standard & Poor's Depositary Receipts, represent ownership in the SPDR Trust Series 1, a unit investment trust established to accumulate and hold a portfolio of the equity securities that comprise the Standard & Poor's 500 Composite Stock Price Index. We chose the SPDR Trust Series 1 because the S&P 500 encompasses a vast array of industries and market sectors. The index is market-cap weighted. Companies with the largest market caps (share price multiplied by the number of shares outstanding) have the biggest influence. Its total return (based on net asset value and market prices) was approximately 16% for the one-year period ended February 2nd. The year-to-date total return is 2.25%.

Top industry sectors include financials, information technology, health care and industrials. Top holdings consist of Exxon Mobile, General Electric, Citigroup, Microsoft, Bank of America, AT&T, Procter & Gamble, and Johnson & Johnson among others. The SPY is currently trading at $144.60 (as of February 2nd), with a 52-week range of $122.34 - $144.95. SPY has a total net asset value of more than $63.4 billion.

Risk Profile

The group's decision to invest 40% of the allotted cash in SPDRs is based on our desire to limit the portfolio's risk profile. A SPDR ETF is one of the safest U.S.-based equity holdings available to our investment team. As of January 1st, SPY's beta coefficient was an attractive 1.01. The SPDRs trade with far less volatility than an average ETF equity fund, which will more than offset the volatility that may arise from our investments in emerging market and small-cap equities. As you can see by the list of this ETF's top-10 holdings below, SPY invests in mature companies with exceptional balance sheets whose performance is not likely to suffer significantly from short-term swings in the United States economy.

Top Ten Holdings as of 2/2/07	**Position**	**% Net**
Exxon Mobil Corp.	28990522	3.384
General Electric Co.	51281586	2.874
Citigroup Inc.	24417663	2.062
Microsoft Corp.	43042758	2.008
AT&T	31136460	1.834
Bank of America Corp.	22332410	1.820
Procter & Gamble Co.	15737257	1.589
Pfizer Inc.	35853953	1.485
Johnson & Johnson.	14419680	1.483
Altria Group Inc.	10428195	1.395



International ETFs (25%)

iShares MSCI Emerging Markets Index (EEM)

The iShares MSCI Emerging Markets Index predominately tracks the performance of the Morgan Stanley International (MSCI) Emerging Markets Index. This index tracks the performance of several emerging markets in the world, including Russia, Taiwan, Korea, and Latin America, among others. Emerging markets are poised to grow at a much faster pace than more developed markets like the U.S. and those in Western Europe. There are several reasons for this trend, including the ongoing globalization and the development of the economic landscape around the world.

Asian economies are becoming more significant players in the global manufacturing sector. China, for example, is benefiting from other countries moving their manufacturing processes there to take advantage of low-cost labor. Also, foreign companies are accumulating wealth by exporting goods to the West. Wages are on the rise, which eventually will lead to increased living standards and higher consumption.

Latin America is another emerging market that is growing at a faster pace than more developed economies. Rising commodity prices are partly driving growth. The growth in Asia has led to an increased demand for basic materials like copper, lead, and energy (oil and natural gas). Prices have increased over the past couple of years to the highest numbers in two decades, and are therefore benefiting commodity-rich economies in Latin America. Another main reason for growth in the above-mentioned markets is the worldwide expansion of financial and credit markets.

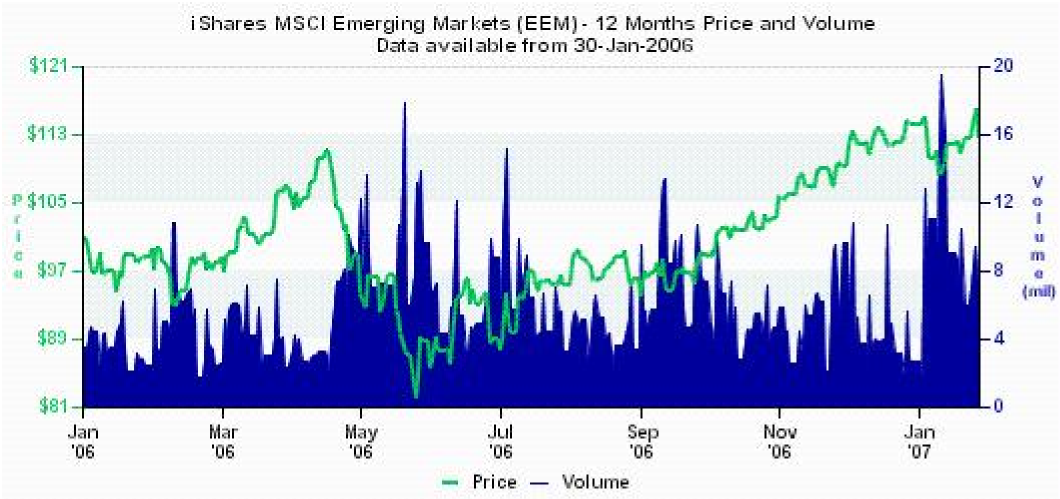
EEM's total-return performance (based on net asset value and market prices) was approximately 19% for the one-year period ended February 2nd. The year-to-date return is about 1.0%. Top industry sectors include information technology, financials, telecommunication services, energy, and materials. Top holdings consist of companies such as Gazprom OAO, Samsung Electronics, Taiwan Semiconductor Manufacturing, Lukoil, Kookmin Bank, among others.

We understand that emerging markets are definitely riskier than developed markets like the U.S. However, by diversifying among several countries in many different regions, EEM minimizes these risks. We chose to allocate 10% of the portfolio in this growing, yet risky, fund. EEM currently trades at $115.01, with a 52 week range of $81.35-$116.50. It has 137.25 million shares outstanding and total net assets of more than $15.5 billion.

Risk Profile

The iShares MSCI Emerging Markets Index represents the riskier portion of our international markets exposure. In the Diversified Emerging Markets category, which contains *the BLDRS Emerging Markets 50 ADR Index Fund (ADRE)*, *iShares MSCI Emerging Markets Index Fund (EEM)*, *iShares MSCI South Africa Index Fund (EZA)*, and the *Vanguard Emerging Markets VIPERs (VWO*), EEM has the best risk profile. Its beta coefficient is 1.71, compared with the category's average of 1.92. In addition, EEM's average standard deviation (SD) of annual returns over the trailing three years was 18.2%, versus the category's average SD of 21%. Looking at the risk-return profile over the three-year period, we see a logical balance of risk-to-return, especially when comparing EEM to the overall Diversified Emerging Markets category.

Top Ten Holdings as of 12/31/06	**% Net**
Gazprom OAO (ADR)	4.53
Samsung Electronic	4.47
Taiwan Semiconductor	3.54
POSCO ADR	2.96
Kookmin Bank ADS	2.61
Lukoil Sponsored ADR	2.14
United Microelectron	2.00
Korea Electric Power Corp.	1.95
Chunghwa Telecom ADS	1.95
Siliconware Power Industries	1.90



Vanguard European ETF (VGK)

The Vanguard European ETF tracks the MSCI Europe Index, and it will account for 15% of our portfolio allocation. We chose the Vanguard European ETF because it provides some diversity to the foreign portion of our portfolio. We like that it offers broad exposure to developed companies in Western Europe. Large-cap companies account for about 85% of the fund's investments, with mid-cap equities filling out the rest of the portfolio. The total return for the one-year period ended February 2nd was 28.5%. VGK is currently trading at $69.35, with a 52-week range of $54.36 - $70.11. It has 23.72 million shares outstanding and net assets totaling nearly $1.6 billion.

Another reason for opting for this fund is the weakening dollar and strengthening euro, along with a European Central Bank that appears willing to raise rates. At the same time it seems like the Federal Reserve might not raise rates in the near future, so the yield advantage of holding dollars over euros may decline.

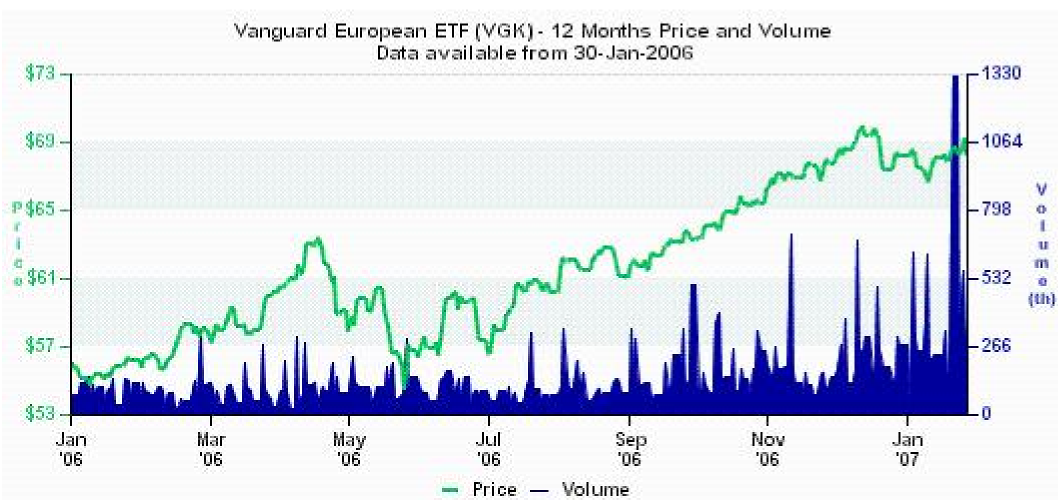
Similar to our reasoning behind opting for the iShare Russell 2000 Index Fund, the Vanguard European ETF increases the portfolio's exposure to the thriving financial services sector. Almost 30% of VGK's investments are in the financial services industry, while industrial materials and energy account for close to 12% each. United Kingdom, France, Switzerland, and Germany equities account for the majority of the fund's holdings. This ETF includes industry heavyweights like British Petroleum (BP), HSBC Holdings, Vodafone Group, among others.

Risk Profile

As is the case with any fund with less than 36 months of total return information, a Standard & Poor's ranking has not yet been assigned to the Vanguard European ETF. Although international ETFs typically carry more risk than U.S.-denominated funds, we think this is a prudent foreign investment. The fund does not invest in emerging market countries, which tend to be more volatile than developed Western European countries. The Vanguard European investment also provides a nice risk contrast to the more volatile iShares MSCI Emerging Markets Index. The presence of this fund should help to lower our international risk profile. As you can see by the sample of holdings below, the Vanguard European Fund predominately invests in less risky, Blue-Chip European companies.

We believe that the Vanguard European Fund will eventually be assigned a beta coefficient of around 1.0, which signifies a very stable fund with an average amount of market risk. Our assumption is based on the category's beta of 1.01 and beta statistics of two ETF that have very similar investment philosophies. The *iShares MSCI EMU Index (EZU)* and *iShares S&P Europe 350 Index (IEV)* have beta coefficients of 1.05 and .93, respectively.

Top Ten Holdings as of 1/29/07	Position	% Net
BP PLC	1678700	2.925
HSBC Holdings PLC	985655	2.607
GlaxoSmithKline PLC	506180	2.123
Total SA	192224	1.897
Royal Dutch Shell PLC	342290	1.728
Nestle SA	35095	1.650
Novartis AG	202497	1.639
Roche Holding AG	61103	1.512
UBS AG	179894	1.477
Royal Bank of Scotland	276784	1.366



Conclusion

After an extensive amount of research on exchange-traded funds, we believe the aforementioned combination will enable the group to successfully meet its stated investment objective of moderate growth and limited risk. This portfolio of both domestic and international ETFs, along with the presence of a low-risk fixed-income fund, provides the foundation for a return at what we believe is a relatively low-risk commitment.

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