3-1-2003

Fixed Income Strategy Crummer/SunTrust Endowment Fund [2003]

Brad Albers
Rollins College

Pablo Presas
Rollins College

Fixed Income Strategy
Crummer/SunTrust Endowment Fund

March 2003

Brad Albers
Pablo Presas

FIN 609
Portfolio Management
Dr. Edward A. Moses

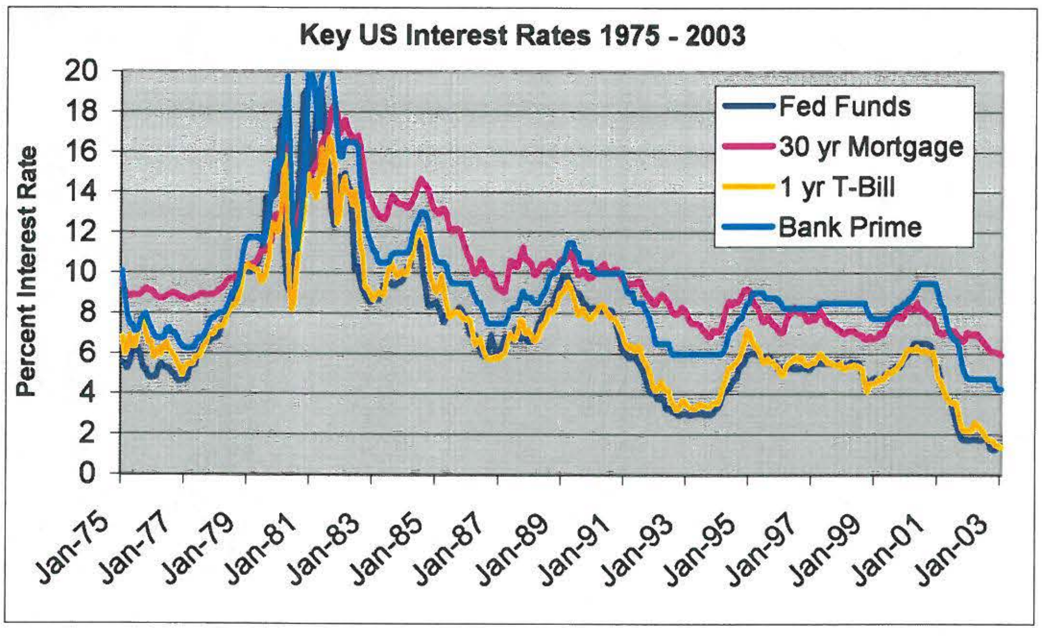
Content

1. Macroeconomic Outlook

Interest Rates

Expected future interest rates are a key factor in determining bonds prices. With key interest rates at 40-year lows, there is a real concern of rising rates in the near future. The figure below shows that key U.S. interest rates are at historically low levels.

Currently there are many economic stimuli on the way that should thrust the U.S. economic engine forward once the Iraq war is resolved. Taxes cuts already enacted and more are likely to come. In addition, larger government deficits, a falling dollar, and a huge trade deficit will all put positive pressure on interest rates. Given all this factors, we approached the fixed-income strategy with the expectation that interest rates will increase in the near future. However, an increase in interest rates is not completely certain. There are a wide range of economic opinions on the matter. Some economists point that a growing global weakness will lead to a possible deflation in the U.S. and a further flight to quality. Although it is very unlikely, a negative outcome in Iraq could exacerbate this last process.
We estimate that current interest rates have 80% probability of increasing and 20% of declining or remaining at the currently levels.



A Falling Dollar

The dollar has fallen about 17 percent in the past year to a four-year low against the euro. This increase will put upward pressure on inflation by increasing the cost of imports (the U.S. has a substantial trade deficit). Also a falling dollar will discourage foreign investors, concerned about currency risk, from investing in the U.S. (Foreigners invest roughly $1 billion a day in U.S. assets) This will impact on America's current account deficit and will also push the Fed to increase the interest rate.

[redacted]

An increasing Government Deficit

With a return to deficit spending by the Federal Government, interest rates should increase in the future to attract more investors to finance the deficit. The White House has increased its projected deficit for the next five years to $1.4 trillion. Also some critics argue that the government projections are based on very optimistic assumptions about economic growth and interest rates (The White House Office of Management and Budget used a 2.9% growth rate in 2003 and average of 3.3% growth between 2003 and 2008). An increasing budget deficit will put more upward pressure on interest rates in the future.

[redacted]

2. Treasuries Notes

Current holds and yield curve

Currently the Crummer Portfolio holds 30,000 U.S. Treasury Notes with a 6% coupon that will mature in August 2004. All investment grade bonds, especially treasuries have performed extremely well over the past three years in comparison to stocks. The terrorist attacks, the war in Iraq, and the massive corporate fraud and accounting irregularities have created an unprecedented flight to quality. Treasuries gained nearly 12% in 2002, and consequently yields have fallen to their lowest level in over 40 years. Currently, 10 year treasuries are yielding 4.10% and 2 year treasuries are only yielding 1.78%. Due to the historically low yields, the massive flight to quality, and the near certain rising interest rates, we are bearish on treasuries and do not believe they are currently an attractive option for a long term investment.

Change Treasury Notes to TIPS

There is also a disconnection between the forecasted inflation and the implied inflation (based on the differences between the yields on 10 year Treasuries and 10 year TIPS). The annual inflation rate for the past 5 years has been 2.31% and the forecasted inflation based on census of leading economists is 2.45%. Currently, 10 year treasuries are yielding 4.1% and 10 year Tips are yielding 2.23%. This implies that the market is only expecting a 10 year inflation rate of only 1.87%. There is a .58% difference between the expected inflation rate of 2.45% (forecasted by The Economist magazine) and the implied rate of only 1.87%. *Therefore, we believe TIPS will be a better investment* *compared to treasuries because inflation is likely to be greater than 2% over the next decade.*

To expand a little about TIPS, The Treasury Inflation Protected Securities (TIPS) are Inflation-Indexed securities that give both individual and institutional investors a chance to buy a security that keeps pace with inflation.
When we buy Inflation-Indexed securities, the U.S. Treasury pays us interest on the inflation-adjusted principal amount. Competitive bidding before the security's issue determines the fixed interest or coupon rate. At maturity, the Treasury redeems our securities at their inflation-adjusted principal or par amount, whichever is greater.
The securities values are periodically adjusted by inflation and the principal received at maturity will not drop below the par amount at which they were originally issued. Like other Treasury securities, they are safe and backed by the full faith and credit of the U.S. Government.

US Treasuries (March, 27, 2003)

Bills		Mat Date	Previous Price/Yield		Current Price/Yield	
3month		6/26/03	1.14	(1.16)	1.13	(1.15)
6month		9/25/03	1.14	(1.17)	1.13	(1.16)
Notes/ Bonds	Coupon	Mat Date	Previous Price/Yield		Current Price/Yield	
2year	1.625	3/31/05	99-30+	(1.65)	100-01	(1.61)
5year	3.000	2/15/08	100-17+	(2.88)	100-20+	(2.86)
10year	3.875	2/15/13	99-18	(3.93)	99-23	(3.91)
30year	5.375	2/15/31	106-25	(4.92)	107-01	(4.91)
Inflation Indexed Treasury	Coupon	Mat Date	Previous Price/Yield		Current Price/Yield	
5year	3.375	1/15/07	109-13	(.86)	109-20+	(0.80)
10year	3.000	7/15/12	107-27+	(2.07)	108-05+	(2.03)
30year	3.375	4/15/32	115-10+	(2.62)	115-20	(2.60)

Our recommendation is to sell the Treasury Notes due in 2004 and invest on Inflation Indexed Treasury with maturity in 10 years.

3. Domestic Bonds Funds

Screening criteria

Mutual funds are excellent instruments for investing in fixed income securities because they typically provide a ladder maturity structure which considerably reduces interest rate risk. Also they allow us to reinvest the coupon payments as well as the maturing bonds. Our primary focus was to find funds with low interest rate risk and low operating expenses. Also, in the case of international bonds, we searched for some funds with low correlations to U.S. interest rates. We used the following screening methodology to analyze and select fixed-income mutual funds for the Crummer Portfolio.

- Moderate to Low Interest Rate Risk
- Ladder Maturity Structure
- Moderate Credit Risk
- Average Maturity less than 10 years
- Low Expense Ratio < 1.5%, preferably < 1%.
- Management Tenure > 3 years, preferably > 5 years
- Additional funds with low Correlation with S&P and LB Bond Aggregate

In addition, because of the expected raise on interest rates, we considered short-term average maturity (less than 5 years) in selecting domestic bonds funds. Bonds with lower maturity will be less impacted by an increase in interest rates

Vanguard Short-Term Corporate (VFSTX)

This fund seeks to provide investors with a high level o current income consistent with maintenance of principal and liquidity. As part of its goal to outperform money-market funds, the fund invests primarily in investment-grade corporate bonds with an average maturity ranging from one to three years. Management employs four major strategies to add value to the fund:

1. limited-duration management
2. sector selection
3. yield-curve positioning
4. specific security selection to achieve additional yield without incurring additional risk.

Although the fund's volatility will be greater than that of money-market funds, its short average duration helps to protect it from major market volatility.

Vanguard Short-Term Corporate Inv	
Trading symbol:	VFSTX
Primary Goal:	High level of Income with maintenance of principal

Dividend Yield	5.50%
Annualized Returns 1yr/3yr/5yr	3.6% / 6.8% / 6.1%
Standard Deviation	2.03%
Average Credit Rating	AA
Expense Ratio:	0.24%
Beta against LB Aggregate	0.49
Average Maturity	2.6 yr
Size:	12,403 million
Manager:	Robert Auwaerter, Since 1984

The VFSTX have had annualized returns of 3.6% in the last year and 6.8% annually over the last 3 years. With a standard deviation of just 2%, this fund is an excellent alternative to money market funds. Not only we can preserve the principal but also gain an above average return over those other funds. With an average maturity of just 2.6 years, we can protect against capital losses due to an interest rates increase. This fund has a low beta of just 0.49 and a diversified strategy among government and corporate bonds. Government notes represent just 18.4% of the portfolio with the remained allocated among corporate bonds from AAA to BBB (Including AA and A). In addition, this fund holds approximately 12% in cash.

FSTX - Bond Quality	
Government	18.4%
AAA	21.5%
AA	12.8%
A	28.2%
BBB	18.9%
BB	0.0%
B	0.0%
Below B	0.0%
Not Rated	0.2%

T. Rowe Price Short-Term Bond (PRWBX)

The fund invests in short- and intermediate-term securities with maturities not exceeding seven years, but the portfolio average must be maintained at three years or less. To achieve its objectives of maximum current income and a high level of liquidity, the fund holds Treasuries, asset- and mortgage-backed securities, corporate bonds, and government-agency issues. At least 65% of portfolio's net assets will be held in short-term bonds. Management attempts to maintain an average credit quality of AA, and may use derivatives to increase income; all such purchases are subject to approval by a derivative oversight committee, which sets parameters for any derivatives in the fund. Management will not normally make interest-rate bets.

T. Rowe Price Short-Term Bond	
Trading symbol:	PRWBX
Primary Goal:	Maximun income with high level of liquidity
Dividend Yield	4.60%
Annualized Returns 1yr/3yr/5yr	3.9% / 7.1% / 6.0%
Standard Deviation	1.70%
Average Credit Rating	AA
Expense Ratio:	0.55%
Beta against LB Aggregate	0.44
Average Maturity	2.1 yr
Size:	989 million
Manager:	Edward Wiese, Since 1995

PRWBX - Bond Quality	
Government	41.0%
AAA	17.0%
AA	7.0%
A	16.0%
BBB	17.0%
BB	1.0%
B	0.0%
Below B	0.0%
Not Rated	1.0%

Since both funds have relative the same strategy of short-term bonds, it is logical that both have had similar returns over the last years. The average credit rating of the PRWBX fund is also AA. However, there are two significant differences with the previous fund. First, the expense ratio is considerable higher (0.55%). And secondly, the composition of this fund is highly inclined towards government bonds.

Comparison between VFSTX and PRWBX

After considering the characteristics of both funds, we believe that the best choice for the Crummer portfolio will be the Vanguard Fund, this fund will preserve principal while pursue maximum income from the short-term securities. The average 2.6 year will preserve the capital in the case of rising interest rates. This fund has a substantial lower expense ratio than the T. Rowe Price fund, which is crucial under these low returns.

The Vanguard Fund will be a better alternative to cash or a money-market fund; it will also preserve the capital and diversify the Crummer portfolio by investing on Corporate Bonds.

A brief comparison of both funds is shown on the following table.

	Vanguard VFSTX	T. Rowe Price PRWBX
Expenses:	0.24	0.55
Return / Standard Deviation (5 yr)	6.10 / 2.03	6.00 / 1.70
Beta	0.49	0.44
Average Maturity	2.6	2.1
Cash	14%	5%
Government Bonds	18.40%	41.00%

4. International Bonds

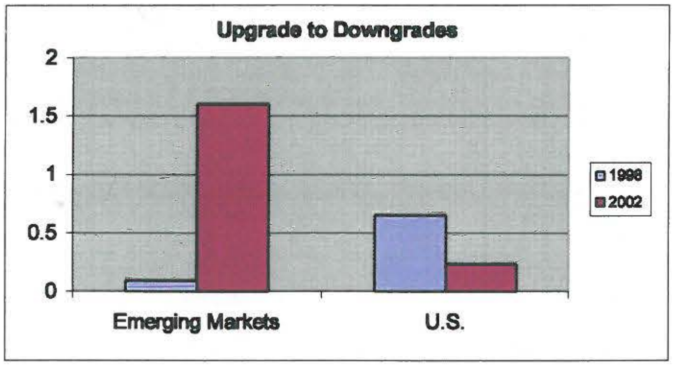
Emerging Market Bond Funds

Because of our concern for rising interest rates we searched for some funds that would have a low correlation to U.S. rates. We considered emerging market bond funds. An emerging market bond fund will provide our portfolio with a hedge against U.S. interest rates and will further diversify our portfolio considering the low and negative betas that emerging market bond funds have in comparison to the S&P 500 and the LB Bond Aggregate. The recent credit trends in Emerging Markets Bond Funds have been improving. This is in stark contrast to credit decay on some U.S. companies. Also, since emerging markets tend to have better access to "Lenders of Last Resort" such as the IMF and World Bank, we believe this will lessen the credit risk compared to high yield U.S. bonds since they usually lack these benefits.

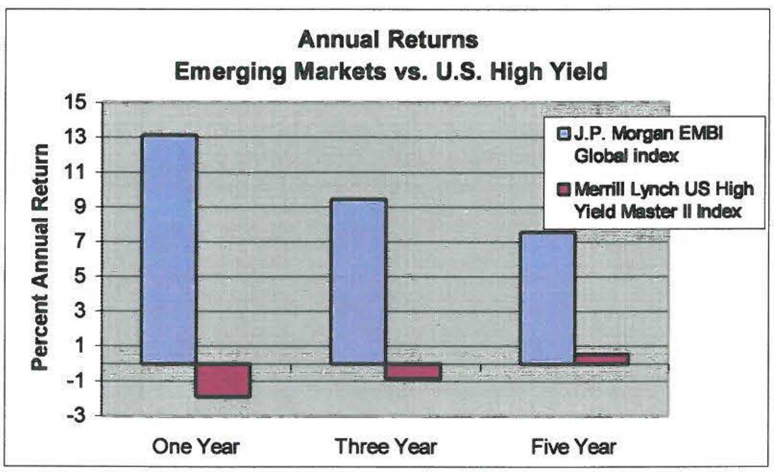
A large concern with emerging market funds is the prospect of default, although the number of defaults in the U.S. greatly exceeds the rest of the world (in absolute numbers not proportional). Year 2002 set a record for both number of corporate defaults, 234 companies, and the level of default, $178 billion. The most defaults were in the U.S. with 128, followed by Argentina with 43 companies. All the other countries had fewer companies that defaulted. The U.K. had 12 defaults and all other defaults were less than 10 by country. The previous record of defaults was in 2001 with 220 companies defaulting on $119 billion of debt.

[redacted]

The emerging market bond sector has been improving its credit rating in comparison to U.S. companies. The figure below shows the ratio of upgrades to downgrades for emerging markets and U.S. companies in 1998 and 2002. In 2002 emerging markets had over 1.5 times as many upgrades compared to downgrades while the U.S. had more downgrades then upgrades.



The emerging market bond index has also significantly outperformed the U.S. high yield index by over 6% for the past 5 years and over 14% for the last year.



Russia's Default

Governments rarely default on their debts, but when they due they make big headlines. The most notable defaults recently have been Russia in 1998 and Argentina in 2002. Since 1998 Russia has made many improvements to avoid future defaults and in 2000 they restructured all of their debt obligations. The default in Russia occurred because of falling oil prices due to a slow down in Southeast Asia. Russia relies heavily on oil revenue for taxes and this decrease caused a sever liquidity crunch. The crunch was exacerbated because a large percentage of regional taxes were in the form of non-cash tax payments. Russia has passed many reforms to avoid such financial problems in the future. First off, they eliminated non-cash payments from the inter-budgetary system and they also tightened control over many of the regional governments by allowing the removal of governors based of executive or legal authority. Also, they separated the legislative and executive powers of the governors. Currently Russia is doing very well economically thanks to reforms and higher oil prices.

Negative Outlook on EU and Japanese Bonds

We considered traditional International Bonds from Japan and the European Union. However, currently there seems to be little advantage to these investment vehicles except possibly to take advantage of a falling dollar. The Japanese economy continues to struggle and reforms have been very slow coming, especially in the banking sector. Yields on a 10 year Japanese government bond are only 0.90% and Japan is facing its fourth recession in a decade. Recently, the Bank of Japan downgraded its economic assessment of the country. We also looked at EU government bonds and found a high degree of correlation between them and Treasuries. Therefore EU bonds will offer little diversification to our portfolio. In December the EU cut interest rates and it is anticipated that more will follow. The outlook for the EU is sluggish, especially in Germany which has never quite recovered from unification and is suffering from a crippling tax policy.

[redacted]

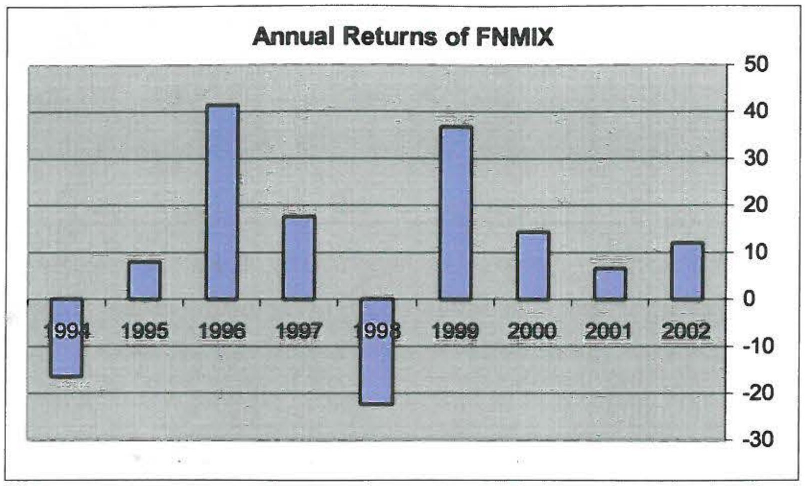
Fidelity New Markets Income (FNMIX)

The primary objective of this fund is to seek current income by investing in emerging market debt. A secondary objective is capital appreciation. The fund primarily invests in Latin American, Eastern European, and Russian debt. The majority of the debt is in the form of government obligations. John Carlson is the fund manager and has been at the helm since 1995. He invests heavily in countries that attract foreign direct investment. Carlson stays relatively true to the J.P. Morgan Emerging Bond Index, however many managers in the emerging bond category tend to deviate from the index since it is dominated by a few countries with large debt burdens. In contrast, Carlson only makes limited country, interest-rate, and issue bets. He has achieved a risk/reward profile that is one of the group's best. Only 10% of the fund's assets are in local currencies. The fund's managers focus most of their attention on beating the index with small, very measured bets.

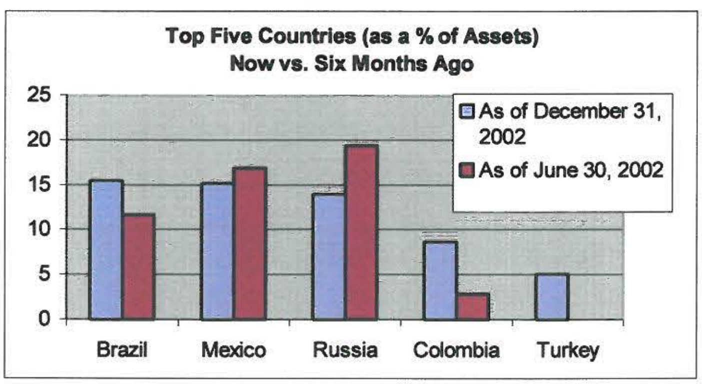
A brief snapshot of the fund is provided in the table below. The fund has returned 12.01% last year and 7.71% annually of the last five years (load adjusted). The fund has very low expense ratio for its category (0.99%). FNMIX has an estimated average credit rating and maturity of BB and 13 years respectively. These values were estimated based on the fund's holdings from the prospects. No public information for these figures could be obtained. The fund has a relatively high turnover of 219%, however, this is less than the category average. FNMIX has an extremely low beta compared to the Lehman Brother Bond Aggregate and the fund has $425 million in assets.

Fidelity New Markets Income	
Trading symbol:	FNMIX
Primary Goal:	seeks current income.
Secondary Goal:	capital appreciation
Annualized Returns (1 yr) / (5 yr)	12.01% / 7.71%
1 Year Annualized Dividend Rate:	8.26%
Standard Deviation (3 yr) / (5 yr)	12.58 / 23.76
Sharpe (3 yr) / (5 yr)	0.58 / .18
Average Credit Rating	~ BB
Expense Ratio:	0.99%
Turnover	219%
Beta against LB Aggregate (3 yr) / (5 yr)	.06 / -0.51
Average Maturity	~ 13 year
Inception:	4-May-93
Size:	$425 million
Manager:	John Carlson, since 1995.

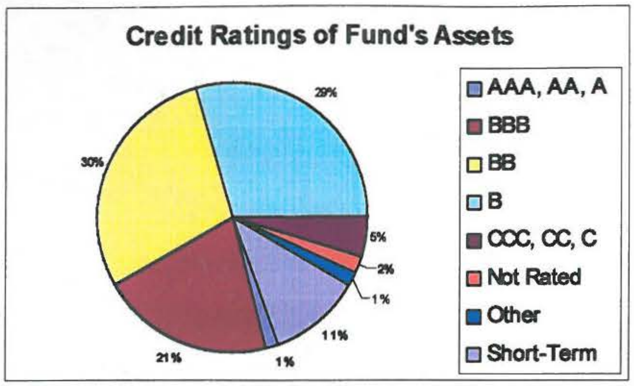
FNMIX has performed extremely well in the past four years compared to the S&P 500. The fund has only experienced two years of negative returns over the past decade and has enjoyed double digit returns 5 of the last 9 years. The fund currently has an annualized dividend payout of 8.26%. The fund has beaten the Lehman Brother Bond Aggregate by 7.15% over the past five years.



58% of the funds assets are in Brazil, Mexico, Russia, Colombia, and Turkey. Carlson was overweighed in Russia for the last three years, but now believes due to the country's continued economic success that its debt valuations are less attractive. Carlson is also confident that the recent political changes in Colombia and Turkey will be favorable. Colombia's new president Alvaro Uribe Velez has demonstrated his commitment to reforms and Turkey's Islamic based AK party has indicated that it will continue the approach prescribed by the IMF and continue towards EU membership.



The fund has approximately 22% of its assets in investment grade debt and 60% in speculative debt. 73% of the fund is in government bonds, 13% is in corporate bonds, and roughly 11% is short term. The figure below shows the percent of the fund's assets by credit rating.

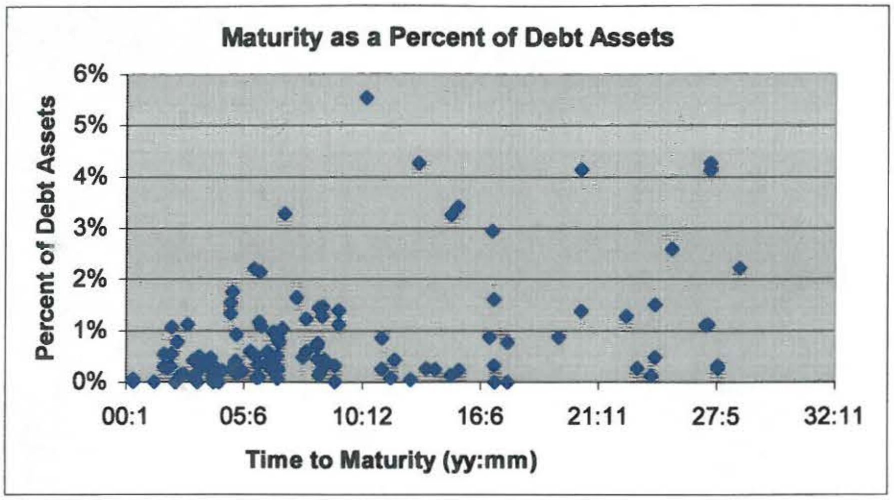


The following table provides an exhaustive list of the fund's holdings by percent assets tabulated by country and class (government versus corporate).

Government Obligations -	73.60%
Brazil	14.1%
Russia	13.5%
Mexico	9.6%
Colombia	8.7%
Turkey	4.4%
Venezuela	3.2%
Argentina	2.6%
Peru	2.6%
South Africa	2.5%
Panama	2.2%
Bulgaria	2.0%
Lebanon	1.5%
Nigeria	1.5%
Malaysia	1.1%
Ecuador	0.8%
Philippines	0.8%
Egypt	0.5%
Ukraine	0.5%
China	0.4%
Dominican Republic	0.3%
Romania	0.3%
Ivory Coast	0.2%
Lithuania	0.2%
Uruguay	0.1%

Nonconvertible Corporates	13.6%
Mexico	5.6%
Malaysia	2.6%
Germany	1.4%
Bermuda	0.7%
Turkey	0.7%
Argentina	0.5%
Russia	0.5%
Canada	0.4%
Indonesia	0.3%
United States of America	0.3%
British Virgin Islands	0.2%
Poland	0.2%
Luxembourg	0.1%
Ukraine	0.1%

The scatter plot below was made to give a rough approximation of the fund's average maturity. The y-axis is the percent of debt assets the fund currently holds. The x-axis is the time to maturity in years and months. The majority of the funds holdings have a maturity of less than 10 years, however several, large single holdings are greater then 10 and 20 years. This ladder approach should help reduce interest rate and reinvestment risks.



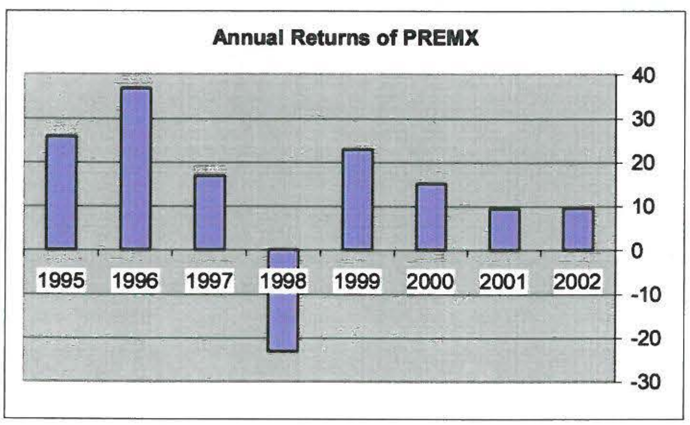
T. Rowe Price Emerging Markets Bond (PREMX)

Unlike FNMIX, this fund makes no distinction between seeking current income and capital appreciation as its primary objective. The fund primarily invests in Latin American, Eastern European, and Russian debt. Almost all of the fund's assets are in the form of government obligations. Mike Conelius has been the fund manager since 1995. Conelius tries to play it safe by emphasizing country diversification. He sticks primarily to dollar-dominated debt to limit currency swings and he stays away from countries if their credit looks shaky. The fund looks a lot different from the J.P. Morgan Emerging Markets Bond Index because of Conelius's diversification strategy. However PREMX has under performed the J.P. Morgan Emerging Bond Index by over 3.5% during the past year.

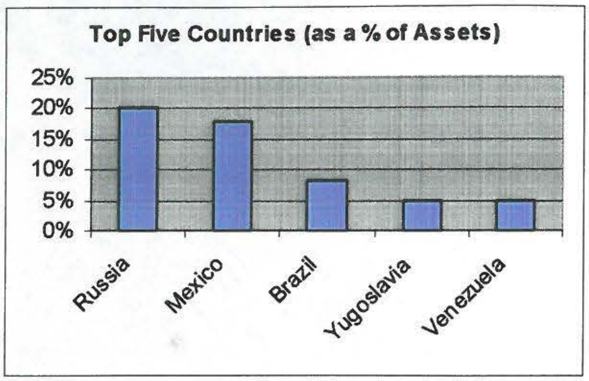
A brief snapshot of the fund is provided in the following table. The fund has returned 9.52 % last year and 5.47 % annually of the last five years (load adjusted). The fund has a fairly low expense ratio for its category of 1.16%. PREMX has an estimated average credit rating and maturity of BB and 12.6 years respectively. The fund has a relatively low turnover of 76%. PREMX has an extremely low beta compared to the Lehman Brother Bond Aggregate and the fund has $155 million in assets.

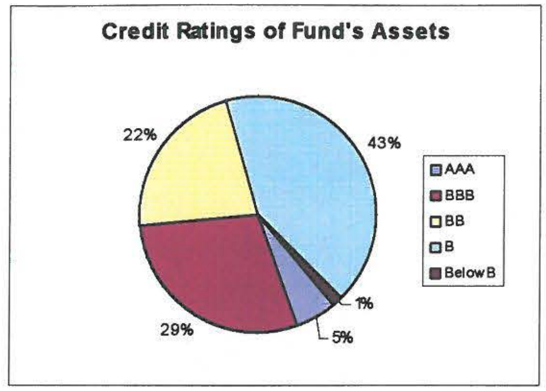
T.Rowe Price Emerging Markets Bond Fund	
Trading symbol:	PREMX
Primary Goal:	seeks high income and capital appreciation.
Annualized Returns (1 yr) / (5 yr)	9.52% / 5.47%
1 Year Annualized Dividend Rate:	7.06%
Standard Deviation (3 yr) / (5 yr)	11.79% / 22.20%
Sharpe (3 yr) / (5 yr)	.66 / .08
Average Credit Rating	BB
Expense Ratio:	1.16%
Turnover	76%
Beta against LB Aggregate (3 yr) / (5 yr)	.43 / -.21
Average Maturity	12.6 yr
Inception:	30-Dec-94
Size:	$155 million
Manager:	Mike Conelius, Since 1995

PREMX has preformed extremely well in the past four years compared to the S&P 500. The fund has only experienced one year of negative returns over the past eight years and has enjoyed double digit returns five of the last eight years. The fund currently has an annualized dividend payout of 7.06%. The fund has beat the *Lehman Brothers Aggregate Bond Index* by 4.63% over the last five years.



Russia, Mexico, Brazil, Yugoslavia, and Venezuela make up 56% of the funds assets. Conelius remains bearish on Brazil do to concerns with the new Lula regime and the weak economic situation the country is in relative to its debt. The fund is underweighted in Brazil. Due to Russia's improving financial condition and increasing oil prices, the country remains the fund's largest holding.





The fund has approximately 34% of its assets in investment grade debt and 65% in speculative debt. 89% of the fund is in government bonds, 5.6% is in corporate bonds, and roughly 4.65% is short term. The chart below shows the percent of the funds assets by credit rating.

The following table provides an exhaustive list of the funds holdings by percent assets tabulated by country. The fund's corporate debt holdings are in Malaysia and Mexico.

Government Obligations	
RUSSIA	19.60%
MEXICO	14.20%
BRAZIL	8.20%
YUGOSLAVIA	4.80%
VENEZUELA	4.60%
COLOMBIA	4.30%
BULGARIA	4.20%
ARGENTINA	4.10%
VIETNAM	3.60%
SOUTH AFRICA	3.10%
PANAMA	2.50%
MALAYSIA	2.20%
PHILIPPINES	2.20%
TURKEY	2.00%
UKRAINE	1.70%
POLAND	1.60%
IVORY COAST	1.30%
SOUTH KOREA	1.20%
EL SALVADOR	0.90%
PERU	0.90%
GABON	0.70%
NIGERIA	0.70%
NORTH KOREA	0.40%

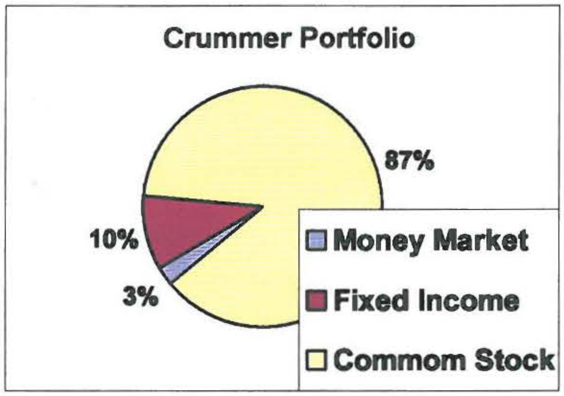
Comparison between PREMX and FNMIX

We favor Fidelity's FNMIX fund over T. Rowe Price's PREMX fund due to its superior return given its only slightly higher risk. FNMIX outperformed PREMX by over 2% annually for the last five years while its risk was only elevated by 1.5%. FNMIX also has a 0.17% lower expense ratio compared to PREMX. The turnover for FNMIX was relatively high at 219% compared to PREMX's 76%. However both of these are lower than the category average of 295%. PREMX is a more diversified and conservative compared to FNMIX which stays relatively true to the JPMEB Index.

	T. Rowe Price PREMX	Fidelity FNMIX
Expenses:	1.16	0.99
Return / Standard Deviation (5 yr)	5.47 / 22.2	7.71 / 23.76
Turnover	76	219
Diversification	More	Less
True to Index (JPMEBI)	No	Yes
Government / Corporate	89 / 5.6	73 / 13
Cash	4.65	9.82
Major Bets	Russia, Yugoslavia	Brazil, Turkey

5. Final conclusions and recommendations

The Crummer/SunTrust Portfolio has only one holding of fixed income instruments which comprise just 10% of the fund. This very low fixed-income allocation makes the portfolio very risky and under diversified. Moreover, had the portfolio have a greater fixed-income allocation, performance in the last 3 years would have been much better. This is because the *Lehman Brothers Bond Aggregate Index* has considerably outperformed the S&P 500 over the last 3 years.



Our first recommendation is to increase the total Fixed-Income allocation to 30% of the Crummer/SunTrust portfolio.

We estimate that interest rates are more likely to move up than to move down or remain the same (80% against 20% probability). The reasons for that are historical low-rate levels, tax cuts, current account deficits with a falling dollar, and an increasing budget deficit.

Our second recommendation is to sell the currently holding of Treasury Notes and to buy 10 years TIPS that are inflation protected and guarantee a positive return above inflation and increasing interest rates.

To hedge the fixed-income portfolio against (although unlikely) decreasing interest rates, we considered to invest in corporate bonds with very short-maturity. The short-maturity will diminish the risk of capital loss when interest rate rises and will yield a higher return than a mere money market fund. We thirdly recommend buying Vanguard Short-term Corporate VFSTX fund.

Fourthly, to add a fixed-income fund with low correlation to US interest rates, we considered to invest in an international bonds fund. We recommend buying Fidelity New Markets Income FNMIX fund (Diversified Emerging Markets).

Finally, within the fixed-income allocation, we recommend to hold 70% in TIPS, 20% in the domestic VFSTX fund, and the remaining 10 % in the international FNMIX fund.