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**INVESTMENT STRATEGY REVIEW OF THE GEF TRUST FUND
(Prepared by the Trustee)**

Executive Summary

1. The World Bank as Trustee for the GEF Trust Fund manages the GEF Trust Fund assets under the provisions of IBRD's and IDA's General Investment Authorizations¹, which are approved by its Board of Executive Directors and determine the framework under which the Trustee provides investment management services to GEF Trust Fund.
2. All trust funds assets administered by the World Bank, including those of the GEF Trust Fund, are maintained in a commingled investment portfolio (the "Pool"). Individual funds within the Pool may have different investment horizons and risk tolerances. To accommodate for these varying investment objectives, the Pool comprises of sub-portfolios (called Model Portfolios) in which trust fund liquid assets can be invested.
3. The current market environment poses challenges for investors in conservative fixed income portfolios as yields on fixed-income instruments are at historically low levels, and rising interest rates could result in unrealized or realized losses for government bond holdings. In coming years, the investment income earned by the Pool is projected to remain at very low levels compared to historical averages under the current asset allocation framework.
4. In light of the current market conditions, the World Bank has developed an additional Model Portfolio to provide additional investment options to trust funds that have liquidity levels that are significant in size and stable over a period of at least five years. Model Portfolio 4 has been designed to potentially enhance the risk/return profile of funds through added diversification benefits, while retaining the conservative approach to risk that overarches the World Bank's investment of donor funds².
5. Model Portfolio 4 would feature a five year investment horizon with a capital preservation constraint and would comprise a broader investment universe, including a limited allocation to developed market equities. Model Portfolio 4 has been discussed with the World Bank Board and has been endorsed by its Audit Committee.
6. The liquid assets of the GEF are currently invested across three existing investment Model Portfolios, with approximately ninety percent invested in Model Portfolio 2 and the remaining assets in Model Portfolios 0 and 1 for liquidity purposes. The GEF Trust Fund meets the eligibility requirements for participation in Model Portfolio 4 though explicit instructions from the GEF Council would be required to approve participation.

¹ General Investment Authorization for IBRD (Resolution No. 97-1, adopted on April 18, 1997); General Investment Authority for IDA (Resolution No. 2001-1, adopted on January 23, 2001).

² The new risk framework defines the risk tolerance as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 95% confidence.

Introduction

1. The Contributing Participants to the GEF-6 replenishment requested the Trustee to explore investment strategy options to increase the investment income in the GEF Trust Fund while protecting the principal of the Trust Fund and maintaining the same conservative risk management framework.
2. This paper provides background information on the World Bank investment management of Trust Fund assets (Section I); reviews the current market environment and investment climate (Section II); discusses the additional investment options available for Trust Funds (Section III); reviews the current investment management strategy and investment performance for the GEF Trust Fund (Section IV); and presents an analysis of GEF's participation in additional investment portfolios (Section V).

I. Background

3. The World Bank manages the GEF Trust Fund assets according to the provisions of IBRD's and IDA's General Investment Authorizations³. The General Investment Authorizations are approved by its Board of Executive Directors and determine the framework under which the Trustee provides investment management services to the GEF Trust Fund. It also specifies the types of transactions and eligible investments in which the World Bank is authorized to transact.
4. Assets held in trust by the World Bank are maintained in a commingled investment portfolio (the "Pool") for all trust funds administered by the World Bank, including the GEF Trust Funds' assets. Individual funds within the Pool may have different investment horizons and risk tolerances.
5. These varying requirements have been accommodated through a *tranching* structure of the Pool. The Pool currently comprises of Model Portfolios: *Model Portfolio 0* comprises bank deposits and money market instruments with an investment horizon of less than three months; *Model Portfolio 1* is a short horizon fixed income portfolio with a greater selection of instruments and an investment horizon of up to one year; and *Model Portfolio 2* is a longer horizon portfolio which has a broader fixed income investment universe and has an investment horizon of up to three years. An illustration of the Model Portfolios along with their investment products composition, investment horizons and eligibility criteria is provided in Annex I. Overall, the asset allocation is in very liquid and highly rated spectrum of eligible instruments.

³ General Investment Authorization for IBRD (Resolution No. 97-1, adopted on April 18, 1997); General Investment Authority for IDA (Resolution No. 2001-1, adopted on January 23, 2001).

6. Any single trust fund can have its total liquidity allocated to one or several of the available Model Portfolios subject to the fund’s operational requirements, risk tolerances and investment horizons as well as subject to meeting eligibility criteria.

7. Over long periods of time, returns for the longer horizon (Model Portfolio 2) are expected to be higher than those of the shorter horizon Model Portfolios (Model Portfolios 0 and 1) due to the greater ability to take risk and withstand volatility, which is reflected in the broader range of instruments they can use. For example, over the past five years, a trust fund which initially invested USD 100 million in Model Portfolio 0 would have seen an annualized absolute return of 0.25%, which would have translated to a cumulative return of approximately USD 0.25 million. The same initial investment invested in Model Portfolio 1 and 2 would have seen annualized returns of 0.46% and 1.24% respectively, translating into returns of approximately USD 0.46 million and USD 1.24 million⁴.

II. Current Market Environment and Investment Climate

8. The current market environment poses challenges for investors in conservative fixed income portfolios. The yields on fixed-income instruments are at historically low levels which poses asymmetric risks for the interest rate outlook going forward. Rising interest rates could result in unrealized or realized losses for bond holdings. In the coming years, the investment income earned by the Pool is projected to remain at very low levels compared to historical averages under the current asset allocation framework.

9. The liquid assets of the GEF are currently invested across three existing investment Model Portfolios, with approximately ninety percent invested in Model Portfolio 2 and the remaining assets in Model Portfolio 0 and Model Portfolio 1 for liquidity purposes. In a portfolio where the majority of funds are invested in Model Portfolio 2, the current market environment means that investment income over the next three years are expected to remain at low levels.

10. In order to depict what the GEF portfolio might look like in three years, a portfolio similar to GEF was examined at the 3-year horizon. The portfolio’s risk/return profile is dependent on the trajectory of interest rates over the next three years⁵, and Table 1 below shows the expected annual returns, volatility in annual returns and probabilities of negative returns under the current asset allocation framework. Assuming the forward rate scenario materializes, the expected annual return for the portfolio would be 1.29% at the 3-year horizon. Under the current rate scenario, the returns are expected to be 0.75% at the 3-year horizon. Under a scenario where asset returns are driven by the macro-economic projection completed by Oxford Economics, a leading macro-economic

⁴ Note, these returns are based on historical actual returns and may not be indicative of future returns.

⁵ Differences between the “forward rate” and “current rate” scenarios illustrate the sensitivity of fixed income asset returns to underlying interest rate assumptions. Historically, forward scenario was used to inform asset allocation decisions.

research institution, the portfolios' returns are expected to be 1.19%. Each of these scenarios indicate a notable annual volatility in returns over the 3-year period, which could lead to unrealized or realized losses. The downside risk under these scenarios is relatively small, as illustrated in Table 1 below.

Table 1: Projected Risk/Return Scenarios for a Portfolio Similar in Composition to GEF

3 Year Horizon – Fixed Income Portfolio Similar to GEF	Scenarios		
	Current Rate	Forward Rate	Macro-Economic Based
Expected Annual Return	0.8%	1.3%	1.2%
Annual Volatility	0.2%	0.3%	0.4%
CVaR Return (95%)	0.2%	0.7%	0.5%
Probability of Negative Return	<0.1%	<0.1%	0.3%

III. Additional Investment Options

11. In accordance with the conservative nature of the World Bank's trust fund portfolio and its investment objectives, trust fund investments in the existing Model Portfolios are primarily invested in high-grade fixed income assets. While such an asset allocation helped the trust fund investment portfolio weather the global financial crisis, the exposure to interest rate risk exposes the portfolio to low (and potentially negative) returns when nominal yields increase, as in the case of the current environment.

12. In light of the current market conditions, the World Bank has developed a new model portfolio (Model Portfolio 4) to provide additional investment options to trust funds that have liquidity levels that are significant in size and stable over a long period of time (i.e. five years or longer). Model Portfolio 4 is designed to potentially enhance the risk/return profile of funds available for medium term investments through added diversification benefits, while retaining the conservative approach to risk that overarches the World Bank's investment of donor funds⁶. Model Portfolio 4 would feature a five year investment horizon and comprise a broader investment universe through the addition of developed market equities.

13. The characteristics of different asset classes with respect to market and liquidity risks, potential for return enhancement, and diversification benefit relative to US Treasuries are summarized in Table 2 below. This table shows that developed market equities exhibit favorable characteristics with respect to liquidity risk, return enhancement and diversification compared to other fixed income instruments. At the same time, developed market equities also carry relatively high market risk compared with high grade fixed income instruments, meaning that the benefits they offer come at

⁶ The new risk framework defines the risk tolerance as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 95% confidence.

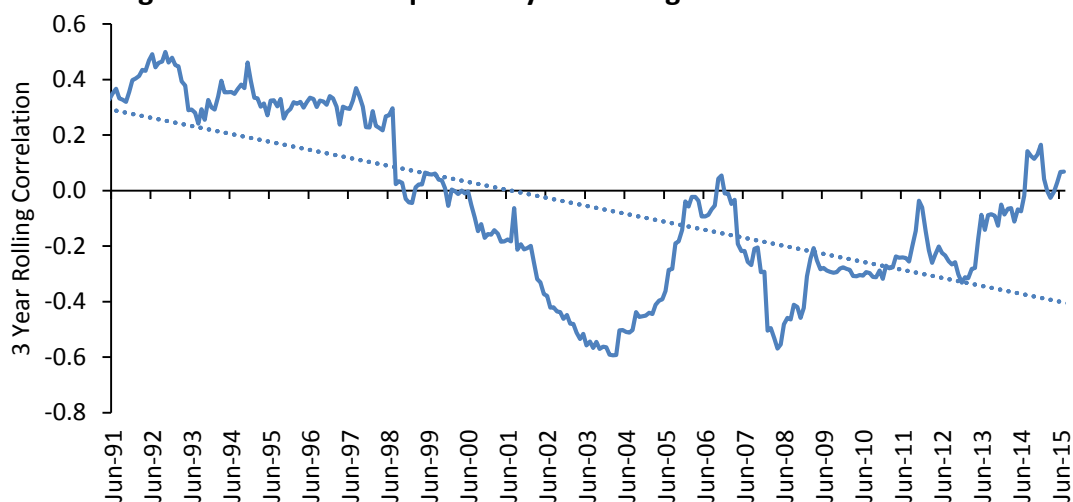
the price of higher short-term volatility. Investors in Model Portfolio 4 should therefore be prepared for higher short term volatility in investment returns relative to the current allocation. Over the longer term, however, an allocation to Model Portfolio 4 will result in higher expected returns relative to the current fixed income only allocation.

Table 2: Summary of Asset Class Characteristics

	Market Risk	Liquidity Risk	Return Enhancing	Diversification Benefit ⁷
Money Market Instruments	Low	Low	Low	Low
US Treasuries	Low/Med.	Low	Low	Low
US Agency Mortgage-backed Securities	Low/Med	Low	Medium	Low/Med.
Global Government Bonds (USD hedged)	Low/Med	Low	Low	Low/Med.
Emerging Market Govt. Bonds (hedged to USD)	Medium	Low/Med.	Medium	Medium
Investment Grade Corporate Bonds	Medium	Med./High	Medium	Medium
Developed Market Equities	High	Low	Med./High	High

14. In the context of Model Portfolio 4, analysis was performed on the historical risk-reward tradeoffs of the asset classes listed above and on the risk-return profile of various asset mixes. The analysis demonstrated that a diversified portfolio mostly outperforms a pure fixed income portfolio over the longer term due to low and often negative correlation between fixed income and equity markets (see Figure 1 below) as performance of the two asset classes vary in different stages of the economic cycle.

Figure 1: Bonds and Equities 3-year Rolling Correlations 1991-2015⁸



⁷ The Diversification Benefit is evaluated relative to 0-5Y US Treasuries or US Treasury indices with shorter maturities between 1-5 years.

⁸ Data Source: MSCI World Equity Index, and Merrill Lynch 1-5 Year US Treasury Index; Bloomberg.

15. The eligibility requirements for participation in Model Portfolio 4 ensure that any trust fund participant must have readily available cash flow projections that demonstrate a minimum projected fund balance of USD 200 million over five years, and that the likelihood of needing to draw on the balances in Model Portfolio 4 over the five-year horizon is as close to zero as practically possible. In addition, the participating trust fund should have a sound financial management framework that is able to cope with the likely increased investment income volatility over the course of the investment horizon. That is to say, at some point over the five-year horizon, one might expect higher levels of investment gains and losses in Model Portfolio 4; however the return after five years is expected to be higher than a similar, fixed income only, Model Portfolio in most cases. Details of the asset classes included under Model Portfolio 4 are shown in Table 3 below. The only asset class that is new to Model Portfolio 4 is that of developed market equities; all other assets are currently included in the Trust Fund investment portfolio.

Table 3: Asset Descriptions of each Asset Class within Model Portfolio 4

Asset Class	Asset Description
Agency/ Sovereign/ Government guaranteed Securities (rated at least AA-)	Bonds or notes issued by a government agency, supranational institution or local authority.
Government Securities (rated at least AA- in case of foreign currency obligations, and any local currency obligations of member countries)	Bonds or notes issued or unconditionally guaranteed by the government of a country.
Corporate Bonds (rated AAA)	Backed by a corporate entity.
US Agency Mortgage-backed Securities (MBS)	US Agency-guaranteed residential mortgage-backed securities.
Asset Backed Securities (ABS) (rated AAA)	Asset-backed securities, backed by student loans, auto and credit card receivables, public sector loans or prime first lien residential mortgages.
Developed Market Equities	A stock or any other security representing an ownership interest.

IV. Investment Management and Historical Performance of the GEF Trust Fund

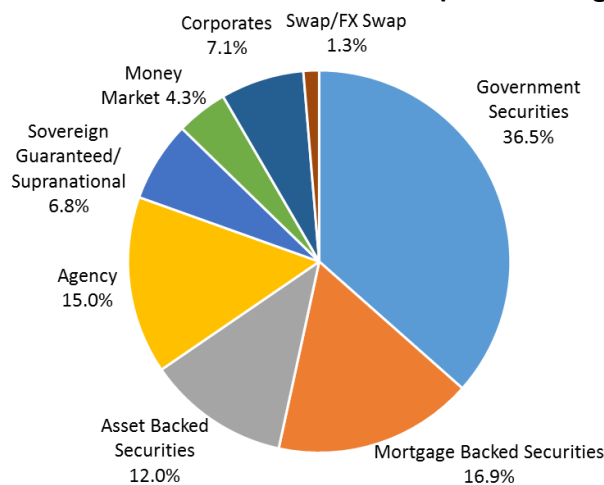
16. The investment objectives for the GEF Trust Fund are to optimize investment returns subject to preserving capital and maintaining adequate liquidity to meet foreseeable cash flow needs, within a conservative risk management framework⁹. GEF liquid assets are invested across three investment Model Portfolios. On a quarterly basis, the World Bank reviews the balances in all investment Model Portfolios against projected cash flows and, as needed, the amounts in each Model Portfolio are rebalanced and

⁹ Risk tolerance is defined as the expected maximum loss, as measured by the Conditional Value-at-Risk (CVaR), at the portfolio's investment horizon, not to exceed 1% at portfolio's investment horizon, with 95% confidence.

adjusted to ensure appropriate matching of balances and projected cash flow needs. The Trustee reports periodically to the GEF Council on investment performance and level of allocations to each Model Portfolio.

17. The investment returns are generated through investment of the GEF’s liquid assets (which total approximately USD 3.4 billion¹⁰) across three existing investment Model Portfolios, with approximately ninety percent in Model Portfolio 2. The remaining assets are invested in Model Portfolio 0 and Model Portfolio 1 to ensure the Trustee can meet disbursement requirements over a one year period. Figure 2 shows the asset allocation of the overall GEF Trust Fund investment portfolio.

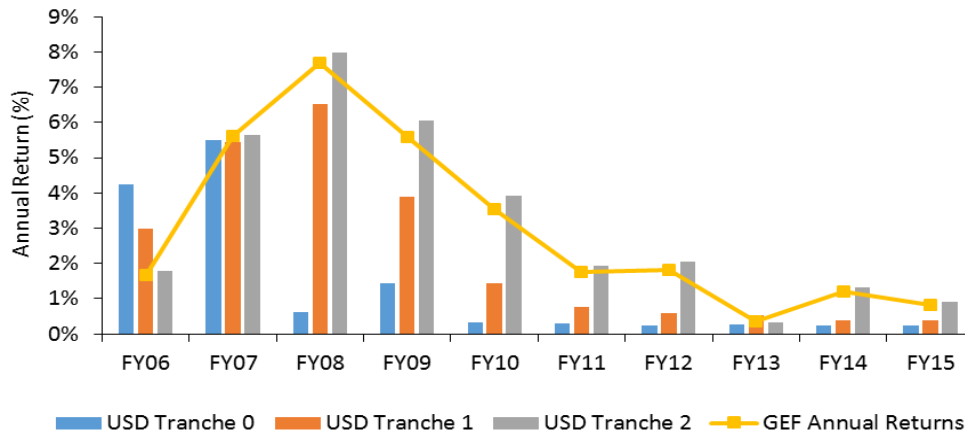
Figure 2: GEF Trust Fund Asset Allocation (as at 31 August 2015)



18. The investment returns achieved within the GEF investment portfolio over the past ten years up to 30 June 2015, shown in Figure 3 below, are representative of the prevailing market conditions of each period. A number of factors have negatively affected investment returns in recent years – firstly, historically low fixed-income yields continued to suppress the interest income, and secondly, increased volatility in interest rates during the year led to unrealized price losses that impacted the net investment income for the year.

¹⁰ As at 31 August 2015.

Figure 3: Annual Returns of the GEF and by Model Portfolio (FY06 – FY15)¹¹



19. GEF meets the eligibility requirements for participation in Model Portfolio 4: it participates in Model Portfolio 2, has financial forecasts for a minimum of five years (in quarterly increments), and the ability to maintain the allocated amount to Model Portfolio 4 for at least five years. GEF’s cash flow projections over the next five years indicate the possibility of a longer investment horizon of the portfolio and enabling a more efficient framework for the asset allocation of the portfolio. Based on these projections, the increased investment horizon would enable GEF to generate higher investment returns.

V. Analysis of GEF’s participation in Model Portfolio 4 investment portfolio

20. Based on GEF’s projected liquidity over the next five years, an analysis was performed to illustrate the GEF’s participation in Model Portfolio 4 investment portfolio with a limited allocation to equities. By incorporating equities in a fixed income portfolio, this option is designed to provide diversification benefits resulting from the often negative correlations between bonds and stocks over the longer term. Historically, this diversification has produced slightly higher average returns for a given level of risk. Nevertheless, investing in equities adds more price volatility to a portfolio, especially over the short term. Therefore, Model Portfolio 4 has a five-year investment horizon in order to optimize the potential benefits.

21. The level of exposure to equity risk for the GEF would depend on the amount allocated to Model Portfolio 4. The maximum equity allocation within Model Portfolio 4 will be no more than 20% of Model Portfolio 4 size at any time so as to conform to the stipulated risk tolerance over the five-year horizon. Hence, if, for example, allocation of liquidity to be invested in Model Portfolio 4 is set up to account for no more than one quarter of aggregate liquidity held by any single fund, the total exposure to equity risk for individual eligible funds would be less than 5% of the fund’s total assets. This is a

¹¹ 1st July 2006 to 30th June 2015.

conservative overall exposure level to equity risk for funds participating in Model Portfolio 4.

22. Over a 5-year horizon, an investment in Model Portfolio 4 could provide higher returns compared to the current asset allocation. In order to illustrate this, the expected annual and total returns of different asset classes at a five-year period were considered under different scenarios:

- i. Current scenario under which interest rates remain at their current levels;
- ii. Forward scenario under which interest rates are expected to gradually converge towards the forward rates over a five-year horizon, as implied by the current market rates.
- iii. Macro-driven scenario under which asset returns and risk factors are driven by a base-case macro-economic projection made by Oxford Economics, a leading macro-economic research institution.

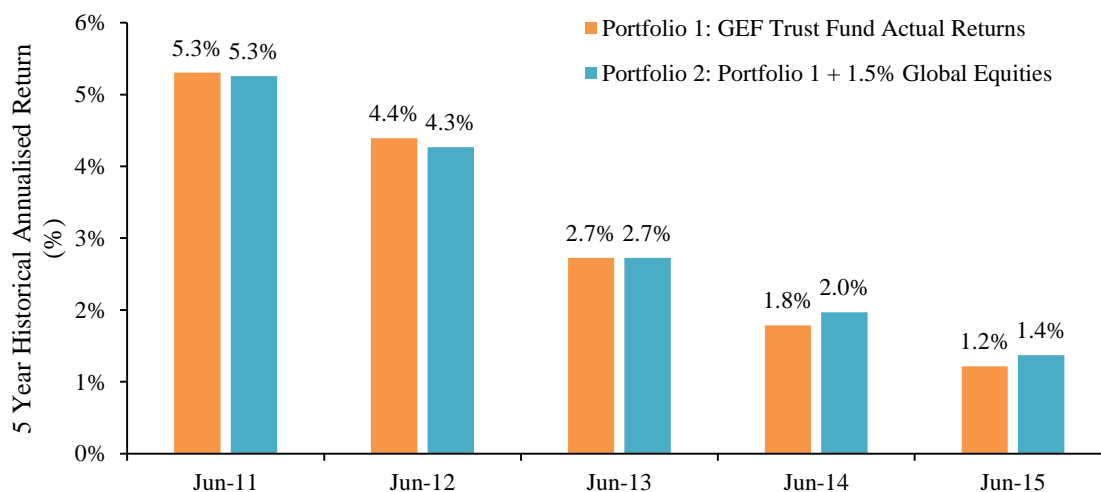
23. For the purpose of this analysis, the scenarios assume an investment portfolio allocation in Model Portfolio 4 of USD 400 million, of which 12% or USD 48 million (which represents approximately 1.5% of GEF's total liquidity) is allocated to developed market equities. Under the Forward rate scenario, an investment portfolio with an allocation to Model Portfolio 4, could return 10 basis points per annum more than the current allocation. In dollar terms, based on average projected fund balances, this represents over USD 3.4 million per year. The comparison is more significant under the Current rate scenario with the portfolio with an equity allocation expected to return annually 0.9% compared with 0.7% for a purely fixed income portfolio. Under the Macro driven scenario, the expected returns between the two portfolios are approximately the same. The 99% CVaR remains inside the policy constraint of -1% at the 5-year horizon under all the scenarios, and the overall volatility are similar due to the diversification benefit. The three scenarios and the associated expected risk and return profiles for GEF's current portfolio compared with a portfolio with a 1.5% equity allocation are presented in Table 4 below.

Table 4: Projected Risk/Return Profiles of the Current GEF Portfolio versus a Portfolio Comprising an Allocation to Model Portfolio 4 at the 5-year Horizon

	Expected Return	Volatility	CVaR Return - 99%	Probability of Negative Returns
Scenario: Current Rate¹² - 5 Year				
Current GEF Fixed Income Portfolio	0.7%	0.3%	0.1%	0.1%
Fixed Income Portfolio with 1.5% Equity Allocation	0.9%	0.3%	0.3%	<0.1%
Scenario: Forward Rate¹⁴ - 5 Year				
Current GEF Fixed Income Portfolio	1.7%	0.4%	0.9%	<0.1%
Fixed Income Portfolio with 1.5% Equity Allocation	1.8%	0.5%	0.9%	<0.1%
Scenario: Macro Driven - 5 Year				
Current GEF Fixed Income Portfolio	1.7%	0.4%	0.8%	<0.1%
Fixed Income Portfolio with 1.5% Equity Allocation	1.7%	0.4%	0.8%	<0.1%

Historical Impact on Investment Returns of a Simulated Portfolio including an Allocation to Equities

24. Historical analysis shows that, in general, a portfolio that includes a 1.5% allocation to global developed market equities held over a period of five years would have equaled or outperformed the GEF Trust Fund investment returns three out of the last five periods¹³ (see Figure 4 below).

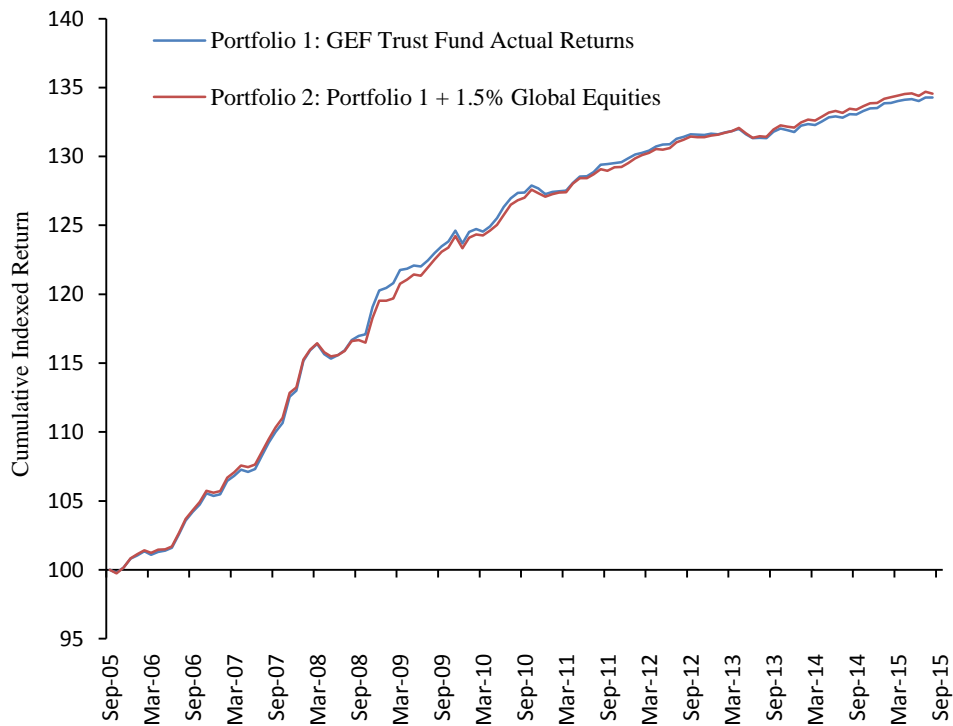


¹² Differences between the “forward rate” and “current rate” scenarios illustrate the sensitivity of fixed income asset returns to underlying interest rate assumptions. Historically, forward scenario was used to inform asset allocation decisions.

¹³ As at 30 June 2015.

25. Over the same time period, the cumulative return of the more diversified portfolio comprising a 1.5% allocation to global developed market equities would have outperformed the GEF Trust Fund by 0.2% (see Figure 5 below).

Figure 5: Historical cumulative performance of a fixed income portfolio versus one with a small allocation to global equities



Annex I: Model Portfolio Composition and Risk/Return Profiles of Underlying Asset Classes

1. Assets held in trust by the World Bank are maintained in a commingled trust funds investment portfolio (the “Pool”), which currently comprises Model Portfolios to accommodate the varying investment objectives and requirements of participating trust funds. Figure 6 below provides an illustration of the model portfolios offered in the Pool, along with their investment products composition.

Figure 6: Asset Composition of Model Portfolios offered in the World Bank’s Trust Fund Portfolio

Asset Class	Model Portfolio 0: Working Capital	Model Portfolio 1: 1-year horizon (short duration)	Model Portfolio 2: 3-year horizon (medium duration)	Model Portfolio 4: 5-year horizon (long duration)
Cash				
Money Market Instruments				
Agency/ Sovereign/ Government guaranteed Securities (rated at least AA-)				
Government Securities (rated at least AA-)				
Corporate Bonds (rated AAA)				
US Agency Mortgage-backed Securities (MBS)				
Asset Backed Securities (ABS) (rated AAA)				
Developed Market Equities				

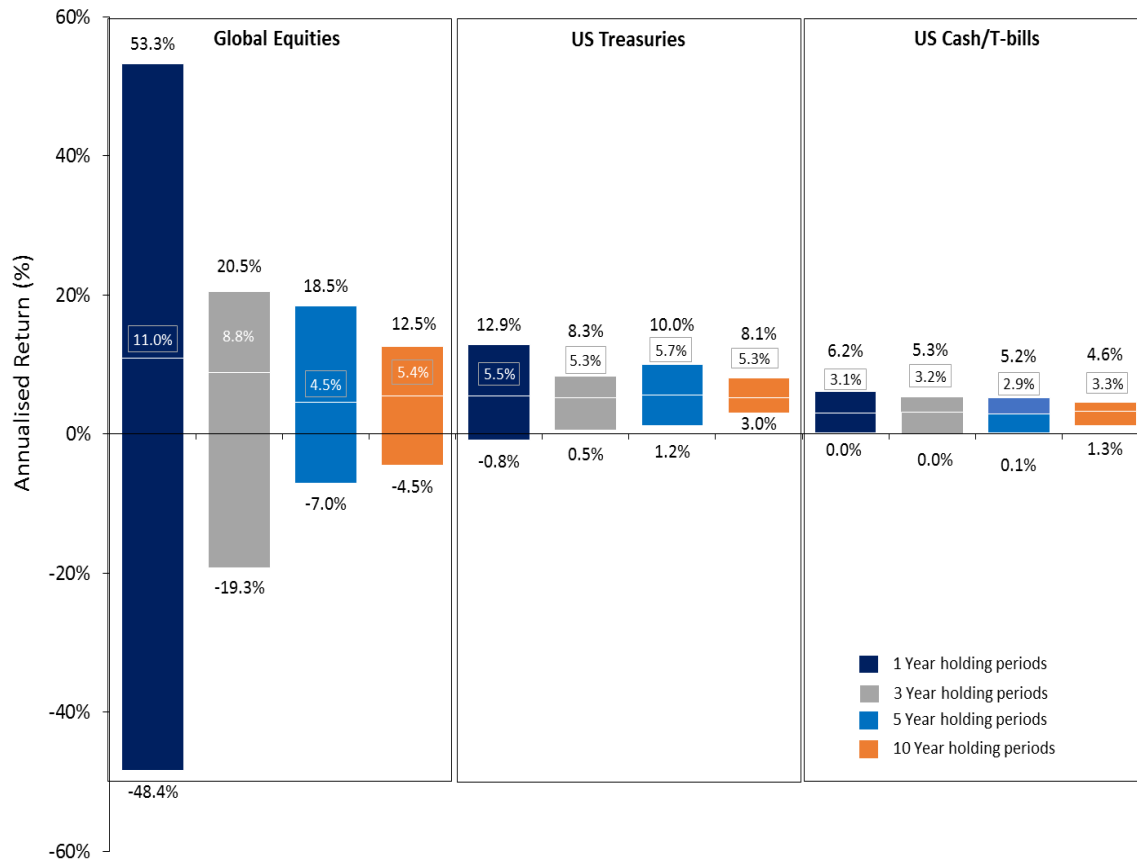
2. A trust fund participating in the commingled investment portfolio may participate in any of the Model Portfolios and investment products subject to meeting the eligibility criteria.

3. To illustrate the historical risk-reward tradeoffs associated with investing in the various asset classes, Figure 7 shows the broad asset class categories of equities, US Treasury bonds and US cash/T-bills, and compares the range of returns over various holding periods.

4. Based on a long history of investment returns, cash and government bonds (1-5 year maturity) have seen relatively stable average returns over various holding periods. On the other hand, equities have shown the highest average returns, relative to bonds or cash, albeit with much higher volatility in returns, which declines with longer holding periods. This is consistent with the rationale for a longer investment horizon typical to

equity investors. The analysis shows that higher risk-adjusted returns may be achieved over longer horizons; however, income volatility over shorter periods is considerably higher and has to be considered.

Figure 7: Historical Range of Returns for Global Equities, US Government Bonds and Cash (1986 – 2015)¹⁴



¹⁴ Source: MSCI World Equity Index, Merrill Lynch UST 1-5 year Index, Merrill Lynch US Treasury Bills 0-3 month Index, Bloomberg.

Annex II: Assumptions used in the Asset Return Scenarios

1. Assumptions used to calculate the investment return scenarios over 3-year and 5-year periods using both forward and current rates are shown below.

Table 5: US Interest Rates and CPI in 5-year periods in the current rate, forward rate, and macro-driven scenarios.

Market Data As Of August 31, 2015	Current rate Scenarios	Forward rate Scenarios	Macro Driven Scenarios
US 3 month	0.2%	2.4%	3.4%
US 2 years	0.8%	2.6%	4.1%
US 10 years	2.4%	2.9%	4.5%
US CPI	1.9%	2.1%	2.2%

** Yields are zero coupon yields*

Table 6: Assumptions used for expected annual returns over 5-year horizons, under current rate, forward rate and macro driven scenarios.

Asset	Current rate Scenarios	Forward rate Scenarios	Macro Driven Scenarios
UST 0-1	0.3%	1.6%	1.8%
UST 1-5	1.6%	1.6%	1.6%
UST 5-10	2.8%	1.6%	0.5%
Libor 3M Constant Maturity	0.3%	1.8%	2.0%
US TIPS 5-10	3.2%	2.3%	0.5%
US MBS	2.3%	1.8%	0.5%
MSCI World Hedged USD	7.0%	7.0%	7.0%