Climate Investment Funds

CTF/TFC.14/Inf.4
November 4, 2014

Meeting of the CTF Trust Fund Committee
Washington, D.C.
November 17, 2014

CIF Trust Funds: Investment Strategy and Options to increase investment income while protecting the principal of the Trust Funds

I. INTRODUCTION

1. At the CIF meetings in Jamaica in June 2014, the CTF and SCF Trust Fund Committees requested the Trustee to explore ways to increase the investment income while protecting the principal of the Trust Funds and to inform the Committees of possible options at its next meeting.

2. This paper provides background information on the World Bank investment management of Trust Fund assets (Section I), reviews the current investment management strategy and the investment performance for the CTF and SCF Trust Funds over the past three years (Section II), discusses the current market environment (Section III), and reviews options for the investment strategy for the CTF and SCF trust funds with the objective of increasing investment income while preserving capital (Section IV).

II. BACKGROUND

3. The World Bank is vested with the authority to manage the CTF and SCF Trust Fund assets (alongside the other trust funds' investment portfolio) under the provisions of IBRD's and IDA's General Investment Authorizations. 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 CIF Trust Funds. 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 CIF Trust Funds' assets. Annex I provides an illustration of the model sub-portfolios included in the Pool, along with their investment products composition and investment horizons.

5. The investment universe includes fixed income and money market instruments, and is mainly consisted of obligations of sovereigns and agencies with credit ratings as shown in Annex II. Overall, the asset allocation is in very liquid and highly rated spectrum of eligible instruments.

6. It is important to note that any investments in instruments beyond the investment transactions that are expressly authorized in the IBRD and IDA General Investment Authorizations will only be allowed upon explicit instructions from relevant trust fund donors or governing bodies of the trust funds.[1]

III. CURRENT INVESTMENT MANAGEMENT STRATEGY AND INVESTMENT PERFORMANCE FOR THE CTF AND SCF TRUST FUNDS

7. The investment objective for the CTF and SCF Trust Funds liquid portfolio is to maximize investment return, subject to (a) maintaining adequate liquidity to meet foreseeable cash flow needs and (b) capital preservation. The capital preservation objective is expressed through a conservative risk tolerance limit. Currently, the risk tolerance is quantified as limiting

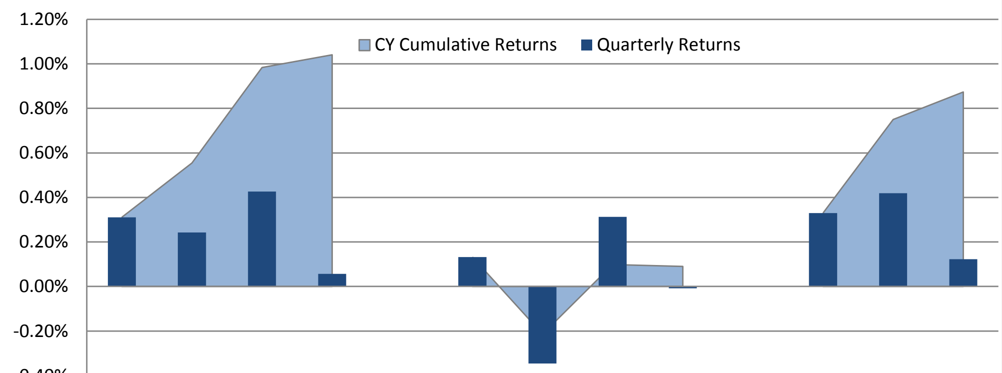
[1] Investment Strategy Review for IBRD/IDA Trust Fund and Financial Intermediary Funds, AC2011-0029 and CIF Trust Funds: Participation in a new Investment Tranche, CTF-SCF/TFC.7/5/Rev.1.

the probability of incurring a negative return of no more than 1% at the pre-specified investment horizon.

8. Currently, the CTF and SCF Trust Funds investment portfolio assets include, but are not limited to, short-term bank deposits, other eligible money-market instruments and highly-rated government, government guaranteed and corporate asset-backed securities, including US agency mortgage-backed securities.

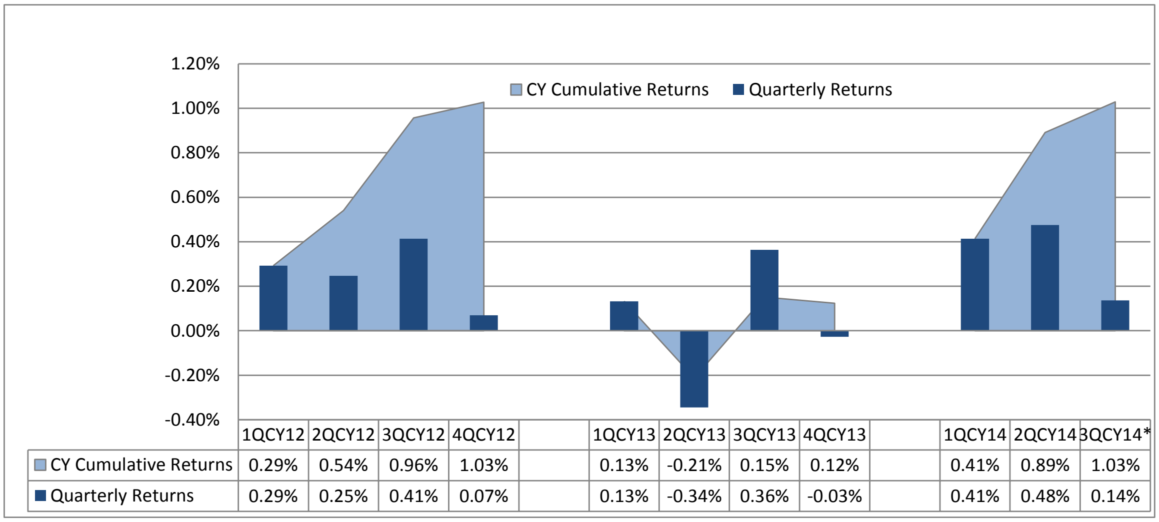
9. CIF Trust Funds portfolio earned attractive investment returns since it became part of the Pool in 2009 up until 2012. However, a number of factors negatively affected the 2013 results. First, historically low fixed-income yields continued to suppress the coupon or interest income. Second, increased volatility in interest rates during the year led to unrealized price losses that impacted the net investment income for the year. Figures 1 and 2 show the returns for the CTF Trust Fund and SCF Trust Fund respectively for 2012, 2013, and 2014 to date.

Figure 1: CTF Quarterly and Calendar Year Returns



	1QCY12	2QCY12	3QCY12	4QCY12		1QCY13	2QCY13	3QCY13	4QCY13		1QCY14	2QCY14	3QCY14*
CY Cumulative Returns	0.31%	0.55%	0.98%	1.04%		0.13%	-0.21%	0.10%	0.09%		0.33%	0.75%	0.87%
Quarterly Returns	0.31%	0.24%	0.43%	0.06%		0.13%	-0.35%	0.31%	-0.01%		0.33%	0.42%	0.12%

Figure 2: SCF Quarterly and Calendar Year Returns



IV. Market Environment

10. The current market environment poses challenges for investors in conservative fixed income portfolios similar to that of the CIF Trust Funds. 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 is projected to remain at very low levels compared to historical averages under the current asset allocation framework.

11. Figure 3 shows the expected annual returns, expected volatility in annual returns and probabilities of negative returns under the current asset allocation framework for the CTF Trust Fund. CTF's current investment portfolio has a 3-year horizon and is concentrated in high-grade fixed income assets. The CTF portfolio risk/return profile at the 3-year horizon depends on the trajectory of interest rates over the next three years[2]. Assuming that the forward rate scenario materializes, the expected annual return for the CTF would be 1.13% at the 3-year horizon. Under the current rate scenario, the portfolio return is expected to be 0.67% at the 3-year horizon. Both scenarios indicate a high annual volatility in returns over the 3-year period, which could lead to unrealized or realized losses as seen by the probabilities of negative return.

[2] 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.

Figure 3: Projected Risk/Return Scenarios for the CTF's Current Portfolio

3-year horizon - Current Portfolio	scenario	
	Forward	Current
Expected Annual Return	1.13%	0.67%
Annual Volatility	1.17%	0.65%
VaR Return (99%)	1.40%	0.32%
CVaR Return (99%)	1.10%	0.10%
Probability of Negative Returns	0.05%	0.20%

V. INVESTMENT STRATEGY REVIEW AND OPTIONS FOR INCREASING POTENTIAL INVESTMENT INCOME RETURNS WHILE PRESERVING CAPITAL

CTF Trust Fund

12. As noted earlier, the CTF Trust Fund Committee requested the Trustee to review options for increasing investment income while preserving the capital of the CTF Trust Fund. To date, the investment strategy for the CTF Trust Fund assets have been concentrated in high-grade fixed income assets[3]--a conservative approach. The strategy is aligned with the current investment objectives and risk tolerance of the CTF Committee, as well as the projected disbursement profile of the CTF Trust Fund assets. In the current environment of low interest rates, the CTF Trust fund investment portfolio could experience low and potentially additional negative returns—in the event that yields increase rapidly going forward. In light of the asymmetric interest rate environment, the CTF Trust Fund investment portfolio continues to be positioned conservatively—by managing interest rate sensitivity and by expanding into a broader range of fixed income markets and financial instruments, such as emerging market bonds. This strategy is aimed at greater diversification of portfolio risks to prevent the concentration of portfolio investments in a certain asset type or area. Diversification could help reduce a portfolio's risk over time while potentially helping increase expected returns.

13. Several options can be considered to further improve the risk and return profile of the investment portfolio such as that of the CTF Trust Fund:

a) Further diversification within the fixed income space, and

b) Expanding asset classes beyond fixed income

14. *Further diversification* within the fixed income space remains anchored in interest rate risk. In addition, opportunities in fixed income markets are limited and within the current

[3] In November 2011, the Trustee presented an option for the CIF Trust Funds to participate in a new Investment Tranche that included a small portion of equities. The joint meeting of the CTF and SCF Trust Fund Committees reviewed the document, *CIF Trust Funds: Participation in a new Investment Tranche* (document CTF-SCF/TFC.7/5/Rev.1). The Committees did not, however, approve the participation of the CTF and SCF Trust Funds in the proposed new investment tranche. See "Summary of the Co-Chairs, Joint Meeting of the CTF and SCF Trust Fund Committees, November 3, 2011", dated November 15, 2011.

investment framework, it remains a challenge to improve the risk and return profile of the portfolio.

15. *Expanding asset classes beyond fixed income.* Publicly traded equities could potentially be included in investment portfolio, given their diversification benefits to the fixed income portfolios. Investments in equities are characterized by a high market risk, i.e. equities exhibit increased price volatility over short horizons. However, the volatility moderates over longer investment horizons. Table 1 below summarizes the characteristics of the public equities and selected fixed-income asset classes.

Table 1: Summary of Asset Class Characteristics[4]

	Market Risk	Liquidity Risk	Return Enhancing	Diversification Benefit*
Money Markets	L	L	L	L
US Treasuries	L	L	L	L
US Agency MBS	L	L	M	L/M
Global Govt Bonds (hedged)	L	L	L	L/M
TIPS	L	L	L	M
Emerging Market Govt Bonds (hedged)	M	L/M	M	M
Corps (investment grade)	M	M/H	M	M
Public Equities (developed countries)	H	L	M/H	H

*Assuming a US Treasury 0 – 5 year index or other US Treasury indices with shorter maturities; L – Low, M – Medium, H - High

16. Equity markets rank favorably based on the attributes listed in Table 2. Limited allocations of equities have shown to improve the performance of fixed income portfolios over the longer term due to the benefits of diversification. However, benefits of the diversification related to investments in equities should be considered in the context of a longer term investment horizon.

17. CTF Trust Fund's projected disbursement profile is favorable towards increasing the investment horizon of the investment portfolio and enabling a more efficient framework for the asset allocation of the portfolio. The increased investment horizon would allow allocation in equities for up to 3.5% of the CTF balance[5].

18. Over the 5-year horizon, a diversified investment portfolio allocation in the CTF Trust Fund could provide higher returns, compared to the current asset allocation. A new investment portfolio, with an allocation to equities of only 3.5%, could return 0.23% per annum more than a portfolio with allocations only to fixed-income assets. This is under the forward scenario. In dollar terms, this is over USD 4.5 million per year (based on average projected fund balances).

[4] The ranking of asset class characteristics in the table is subjective. The rankings are assigned based on the knowledge and historical investment management experience of the World Bank's Treasury.

[5] The World Bank's Investment Strategy for IDA/IBRD Trust Funds and Financial Intermediary Funds states that the equity allocation should not be higher that 25% of a fund's 5-year stable balances, which translates in no more that 3.5% of the CTF's current overall portfolio balances.

Moreover, the overall volatility and probability of negative return would remain comparably low at the 5-year horizon. Expanding the asset mix into equities requires, however, a higher tolerance to short term return volatility. At the 5-year horizon, though, the probability of negative returns of a portfolio that has a 3.5% allocation to equities is estimated to be 0.00% under the current interest rate scenario and an insignificant 0.05% probability under the forward interest rates scenario (see Table 2). Risk and return profiles of alternative the portfolio allocations over the 5-year horizon are given in Annex III.

19. The expected annual and total returns of different asset classes at a five-year period were considered under different scenarios[6]:

a. Current scenario under which interest rates remain at their current levels;

b. 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.

20. The two scenarios and the associated expected risk and return profiles for a fixed-income portfolio and a portfolio with a 3.5% equity allocation are presented in Table 2. The differences between the forward and current scenarios illustrate the sensitivity of fixed income asset returns to interest rate assumptions.

Table 2: Projected Risk/Return Profile at the 5-year investment horizon

	Current Scenario		Forward Scenario	
	Portfolio with 3.5% Equity Allocation	Fixed-Income Portfolio	Portfolio with 3.5% Equity Allocation	Fixed-Income Portfolio
Expected Annual Return	1.23%	0.66%	1.96%	1.73%
Annual Volatility	1.90%	1.34%	3.07%	3.01%
Probability of negative returns	0.00%	0.10%	0.05%	0.00%

SCF Trust Fund

21. The SCF Trust Fund's projected disbursement profile and liquidity indicate that the current investment horizon and the accompanying investment strategy remain appropriate for the SCF Trust Fund. Based on the analysis performed, the SCF Trust Fund does not meet the criteria for allocating a portion of its assets to equities due to the limited size of its investment portfolio. Thus, in the current market environment, SCF Trust Fund investment portfolio will continue to be positioned conservatively by managing interest rate sensitivity.

[6] Forward rates, as implied by current yield curves, should be viewed as a general indicator of market expectations, rather than a forecast of future interest rates.

Annex I: Structure of the Commingled Trust Funds Portfolio (Pool)

Assets held in trust by the World Bank are maintained in a commingled trust funds investment portfolio (the “Pool”) for all trust funds administered by the World Bank, including the CIF Trust Funds’ assets. The Pool includes the assets of more than 1,000 trust funds. Given that all the participating trust funds have varying operational and liquidity requirements and different risk tolerances and investment horizons, the Pool is structured into model portfolios (sub-portfolios) in order to accommodate the varying needs. The table below provides an illustration of the sub-portfolios (or tranches) offered in the Pool, along with their investment products composition as represented by benchmark indices.

	Model portfolios or custom asset allocation by client	Model portfolio 0 Cash Tranche *"Tranche 0"*	Model portfolio 1 Capital preservation over a 1-year horizon *"Tranche 1"*	Model portfolio 2 Capital preservation over a 3-year horizon *"Tranche 2"*	Model portfolio 3 LIBOR based *"Tranche 3"*	Model portfolio 4 Equities Tranche - 5 year horizon *"Tranche 4"*
Investment books/products	Operational cash (TC01)	x				
	Stable cash/LIBOR book (TT07)		x	x	x	
	EM asset swapped LIBOR book (TT17)		x	x	x	
	Short duration UST 0-1 yr (TT20)		x	x		
	Medium duration UST 1-5 yr (TT21)		x	x		x
	US Agency MBS (TT18)			x		x
	EUR Govt Bond book (TT23)	x	x			
	Inflation linked benchmark			x		x
	Long duration government benchmark					x
	Equities					x

CIF Trust Funds participate in the following sub-portfolios:

- **Model Portfolio 0:** cash portfolios in USD and Euros with an investment horizon of less than three months which aim to ensure timely availability of funds to meet short-term cash flow needs, and which comprise short-term bank deposits and highly liquid money-market instruments;
- **Model Portfolio 1:** short horizon portfolios in USD and Euros with an investment horizon of one year, and which are invested in highly-rated money-market instruments and government securities;
- **Model Portfolio 2:** longer horizon portfolio in USD with an investment horizon of three years, and which is invested primarily in highly rated government, government agency, and corporate asset-backed securities, including mortgage-backed securities.

In addition to the above, the trust funds investment portfolio also offers additional sub-portfolios to meet specific liquidity and investment objectives of its participants and may change these offerings from time to time. At present the following sub-portfolios are offered:

- **Model Portfolio 3:** LIBOR benchmarked portfolio in USD; currently, one fund participates in this offering.
- **Model Portfolio 4:** long-term portfolio in USD invested over a five year or more investment horizon, which would be invested in high-quality fixed income securities with a limited allocation to equities.

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

	Model portfolio 0 *"Tranche 0"*	**Model portfolio 1** *"Tranche 1"*	**Model portfolio 2** *"Tranche 2"*	**Model portfolio 4** *"Tranche 4"*	**Model portfolio 3** *"Tranche 3"*
Eligibility Requirements	Default Allocation				
	Fast-disbursing and/or not able to withstand any investment income volatility		1) Adequate core balances of US$200 million 2) Ability to provide updated cash flow forecasts over the respective horizon 3) WB internal review & approval required to participate		
				In addition, written instruction from a fund's governing body or donor(s) is required for equity investments	

Annex II: Asset Classes Eligible for the Trust Funds Portfolio

Asset Class	Asset Description
Government Securities (rated at least AA- for USD obligations or based on Credit Committee approval)	Marketable bonds, notes or other obligations issued or unconditionally guaranteed by the government of a country in its own domestic currency.
US Agency Mortgage-backed Securities (MBS)	US Agency-guaranteed residential mortgage-backed securities, including fixed-rate pass-through, adjustable rate mortgages (ARMs), interest-only (IO) and principal-only (PO) strips, and collateralized mortgage obligations (CMOs). Commercial Mortgage Backed Securities (CMBS) and non-agency MBS are not included.
Asset Backed Securities (ABS) (rated AAA)	Asset-backed securities (ABS), backed by student loans, auto and credit card receivables, public sector loans or prime first lien residential mortgages and domiciled in an eligible country.
Agency/ Sovereign/ Government guaranteed Securities (rated at least AA-)	Marketable bonds, notes or other obligations issued by a government agency, supranational institution or local authority domiciled in an eligible country as well as corporate debt guaranteed by the government of eligible countries.
Corporate Securities (rated AAA)	Obligations of a corporate entity.
Money Market Instruments/ Financial Institution Securities (rated at least A-)	Time deposits, certificates of deposit, reverse repurchase agreements and other obligations issued or unconditionally guaranteed by a bank or other financial institution domiciled in an eligible country, whose senior debt securities mature in 3 months or less.

An average of the credit ratings issued by the three major credit rating agencies (Standard & Poor's, Moody's Investors Service and Fitch Ratings) is used.

Annex III: CTF Portfolio alternative asset allocations (excluding cash)

Portfolio name	3m libor	UST 0-1y	UST 1-5y	UST 5-10y	TIPS 5-10y	US MBS	Equities
PORTFOLIO 1	51.0%	17.0%	0.5%	4.0%	3.5%	20.5%	3.5%
PORTFOLIO 2	51.0%	18.0%	1.0%	3.5%	3.0%	20.5%	3.0%
PORTFOLIO 3	53.0%	18.5%	0.5%	3.0%	2.5%	20.0%	2.5%
CURRENT	58.3%	24.1%	1.0%	0.0%	0.0%	16.6%	0.0%

A. Risk/Return Profiles of alternative asset allocations (excluding cash) over the 5-year investment horizon:

Portfolio Projection
5-year investment horizon

Scenario: Current	PORT 1	PORT 2	PORT 3	CURRENT
Expected Annual Return	1.23%	1.17%	1.09%	0.66%
Annual Volatility	1.90%	1.76%	1.62%	1.34%
VaR return (99%)	2.05%	2.16%	2.16%	1.41%
CVaR return (99%)	1.61%	1.73%	1.70%	0.99%
Prob. of neg. returns	0.00%	0.00%	0.00%	0.10%

Scenario: Forward	PORT 1	PORT 2	PORT 3	CURRENT
Expected Annual Return	1.96%	1.93%	1.90%	1.73%
Annual Volatility	3.07%	2.96%	2.91%	3.01%
VaR return (99%)	4.74%	4.94%	4.98%	4.59%
CVaR return (99%)	3.76%	4.04%	4.25%	4.24%
Prob. of neg. returns	0.05%	0.05%	0.00%	0.00%

Annex IV: Asset Return Scenarios

Asset returns scenarios over 1-, 3- and 5-year periods, implied by forward markets (Information is as of end-of August):

		Forwards		
	Current	1 year	3 year	5 year
US Treasury 3 month yield	0.0%	0.6%	2.0%	3.0%
US Treasury 2 year yield	0.5%	1.2%	2.5%	3.2%
US Treasury 10 year yield	2.3%	2.8%	3.3%	3.6%
US Treasury 10 year real yield	0.2%	0.5%	0.8%	0.9%
US CPI	1.9%	2.0%	2.0%	2.0%
Equity Return		7.0%	7.0%	7.0%

Expected annual returns over 1-, 3-, and 5-year horizons, under current and forward scenarios:

Expected Annual Asset Returns	Current Scenario	Forward Scenario		
		5y	3y	1y
3 month USD Libid	0.1%	1.7%	1.0%	0.3%
US Treasuries 0-1	0.1%	1.5%	0.9%	0.2%
US Treasuries 1-5	1.7%	1.6%	0.9%	0.2%
US Treasuries 5-10	3.3%	1.6%	1.0%	0.4%
TIPS 1-5y	1.8%	1.7%	1.2%	0.6%
TIPS 5-10y	2.7%	1.7%	1.3%	0.9%
US MBS	3.2%	2.3%	1.9%	1.5%
Equity	7.0%	7.0%	7.0%	7.0%