

# Revisiting Investment Strategy in an Increasing Interest Rate Environment

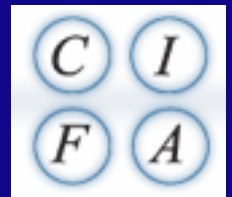
CIFA Presentation  
May 11, 2006



STANDARD  
& POOR'S

# Panel Participants

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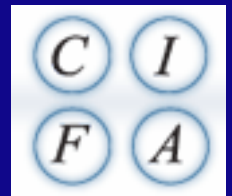
New York State Environmental Facilities Corporation

- **Jim Wiemken**

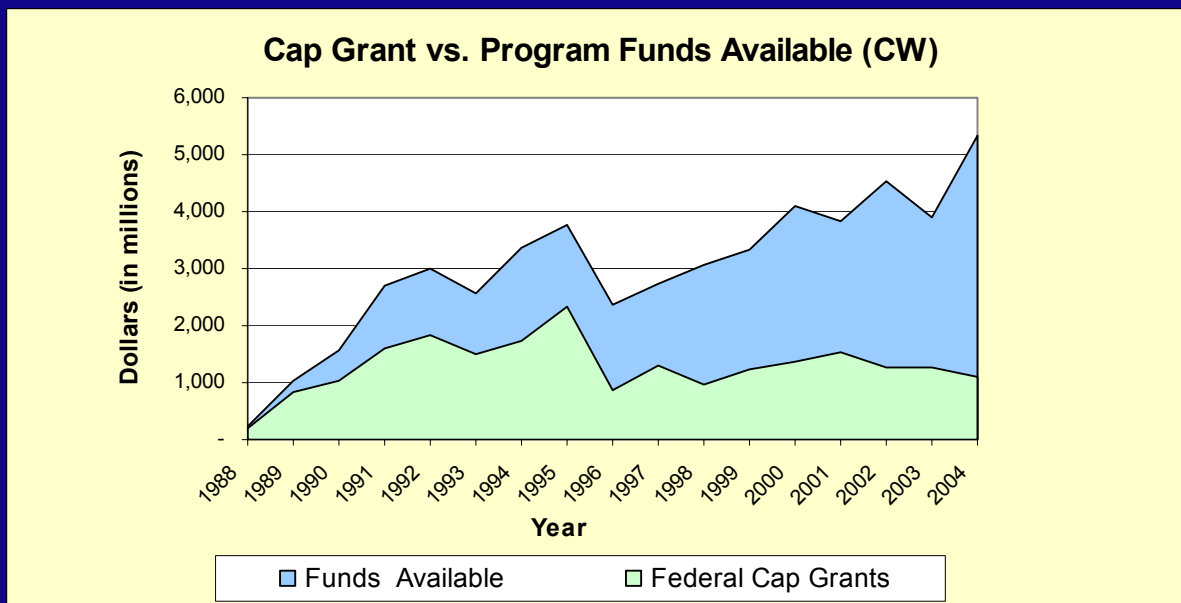
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Standard & Poor's

# SRF Program Growth



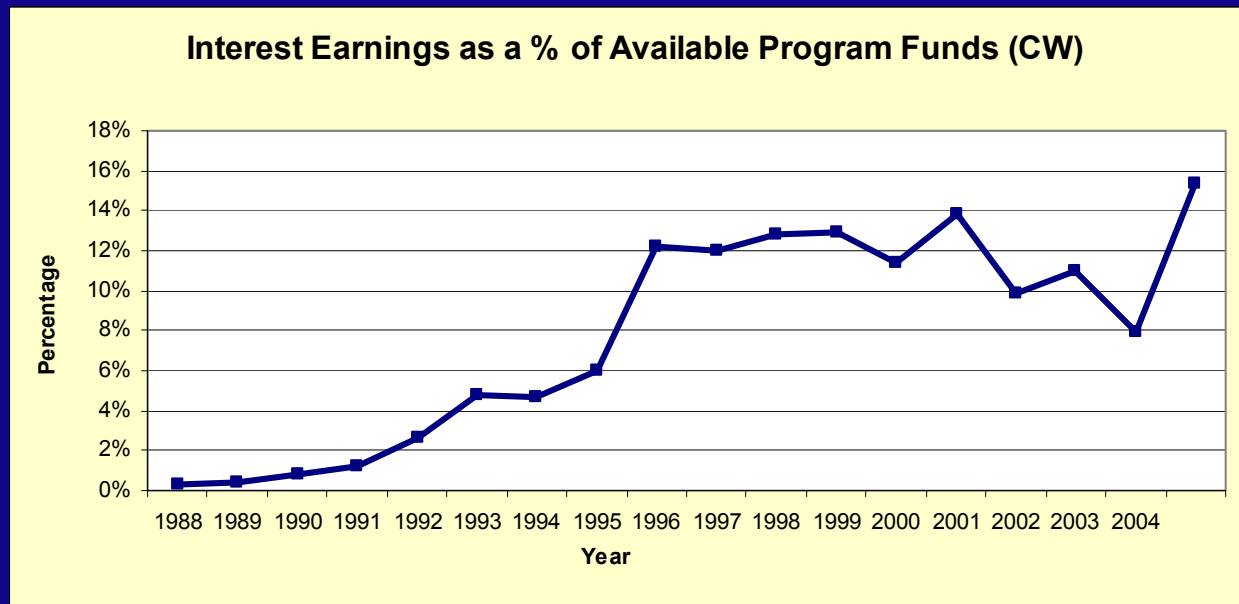
- As SRF Programs have matured, program balances have grown to significant levels
- As loans are recycled, annual Federal Cap Grant contributions represent less of available program dollars



# Program Earnings Have Greater Significance

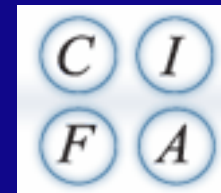


- Interest income has become a larger component of available program funds
- As the Federal Government decreases annual funding, maximizing investment return becomes essential to sustain a healthy program capacity

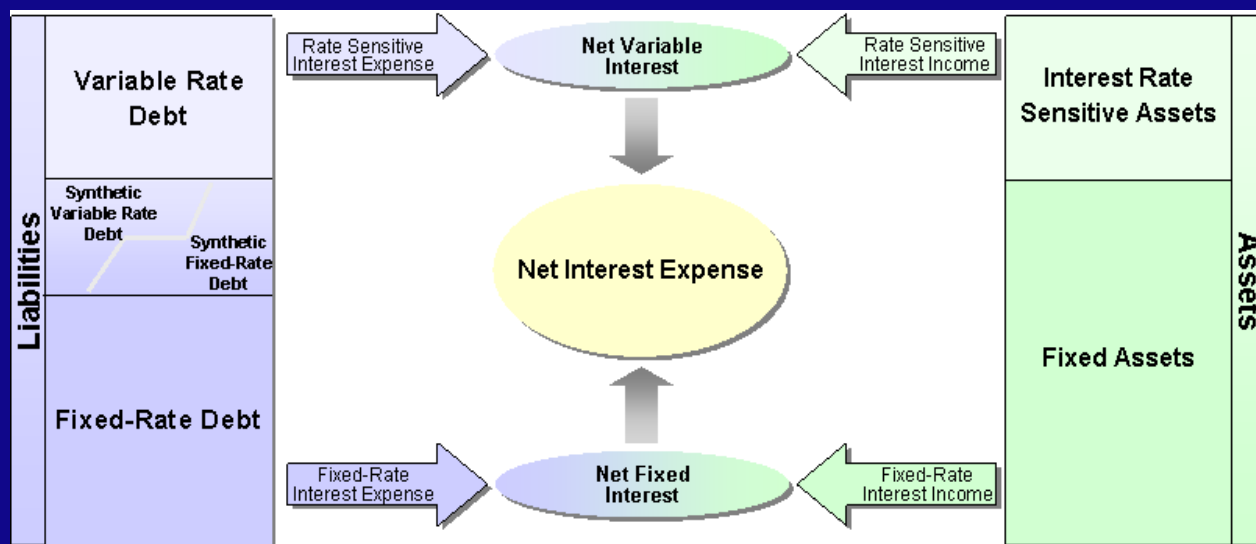


Source: EPA NIMS Data

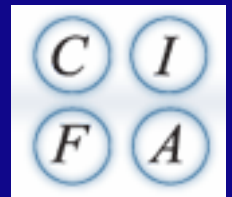
# Investment Strategy, A Holistic Approach



- In general, a comprehensive investment strategy should be designed to focus a balanced management of both the assets and liabilities of the program
- As SRF programs consider the use of variable rate debt and derivatives to lower the capital costs of borrowers or to improve program capacity, investments can be used to mitigate interest rate risk

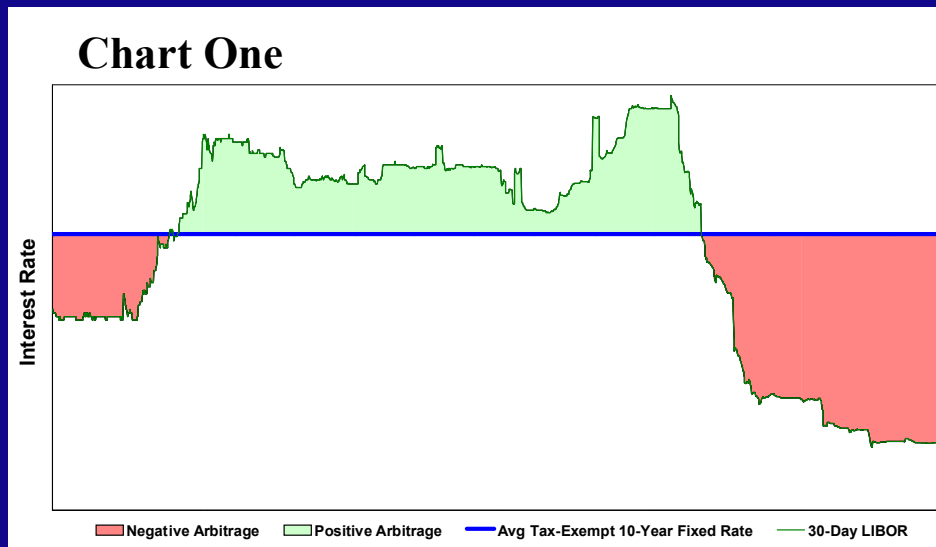


# Asset-Liability Management



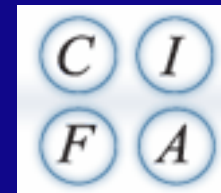
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## WHY?



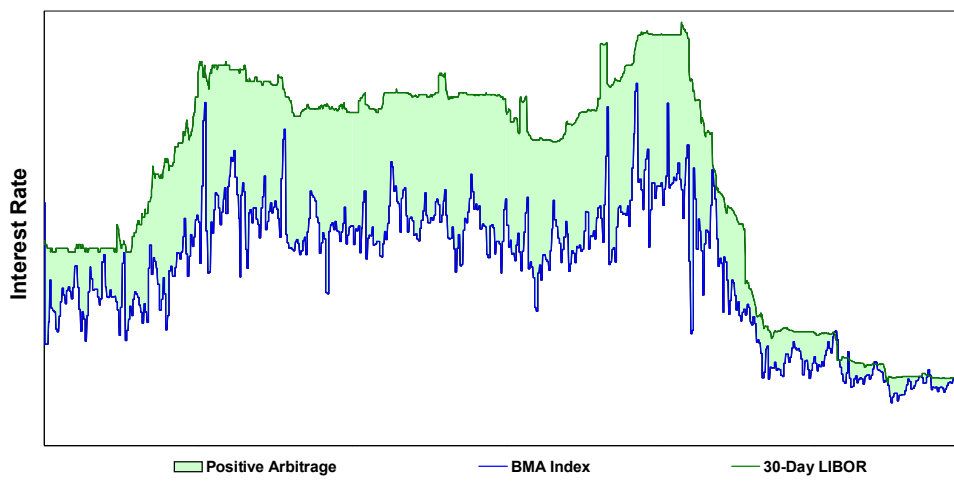
Consider the borrower who consistently invests short-term, but issues long-term debt

# Asset-Liability Management



By managing the capital structure to more or less match variable assets with variable rate liabilities, an issuer can lower its net borrowing cost

Chart Two



If the same issuer managed its capital structure to include some amount of variable rate bonds in its debt portfolio (an amount roughly equal to the balance of variable rate assets), its exposure to interest rate risk does in fact decrease

# Investment Strategy - Other Considerations

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Program administrators seeking to optimize investment return may encounter several initial constraints -

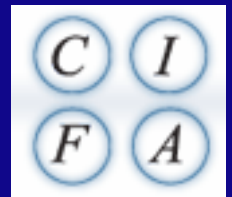
- **Federal Requirements**

- Section 602(b)(4): Requiring all program funds be “... expended in an expeditious and timely manner”
- Section 148: Arbitrage Regulations which may limit the amount of retainable earnings to a program

- **Control of Assets – State Treasurer involvement**

- **Program Investment Policies, Rules and Guidelines**

- **Available time and resources of program staff**



# Optimizing SRF Program Investments

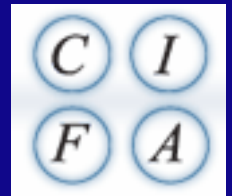
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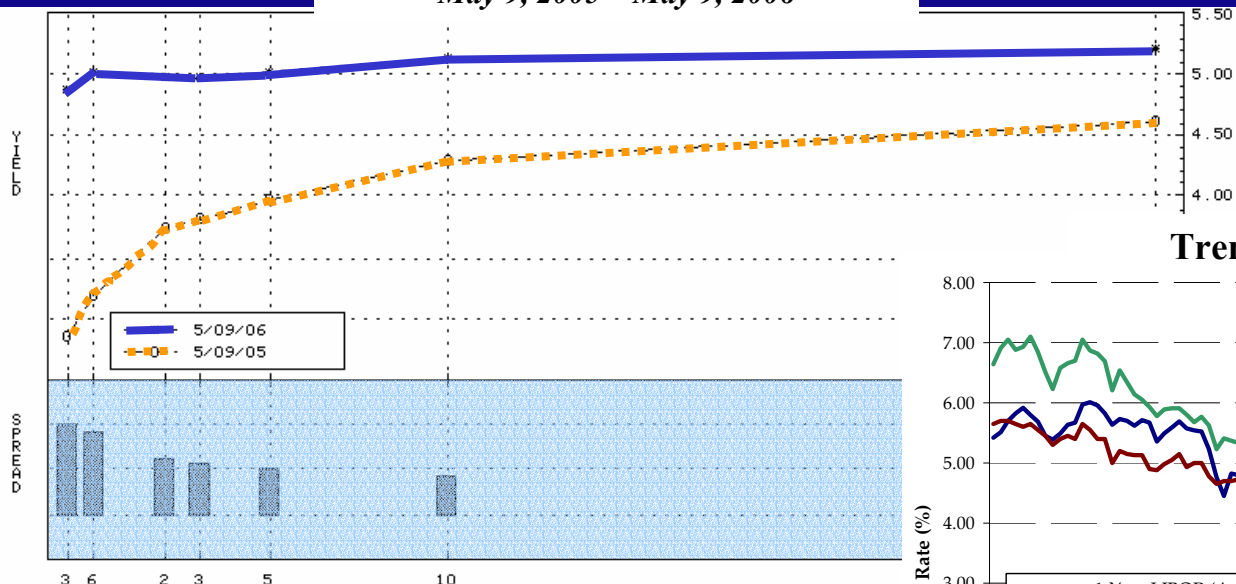


# Current Market

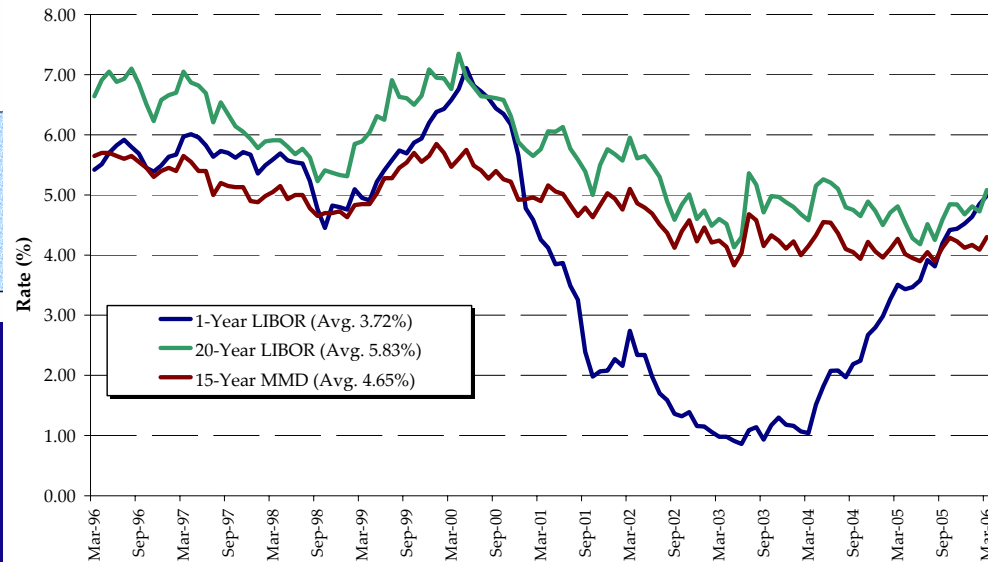


- In general, the current relationship between tax-exempt borrowing costs and the return of taxable investments enable borrowers to generate positive arbitrage. An ideal strategy should be designed to maximize the amount that can be retained.
- The treasury curve is relatively flat and, in fact, inverted on the short end.

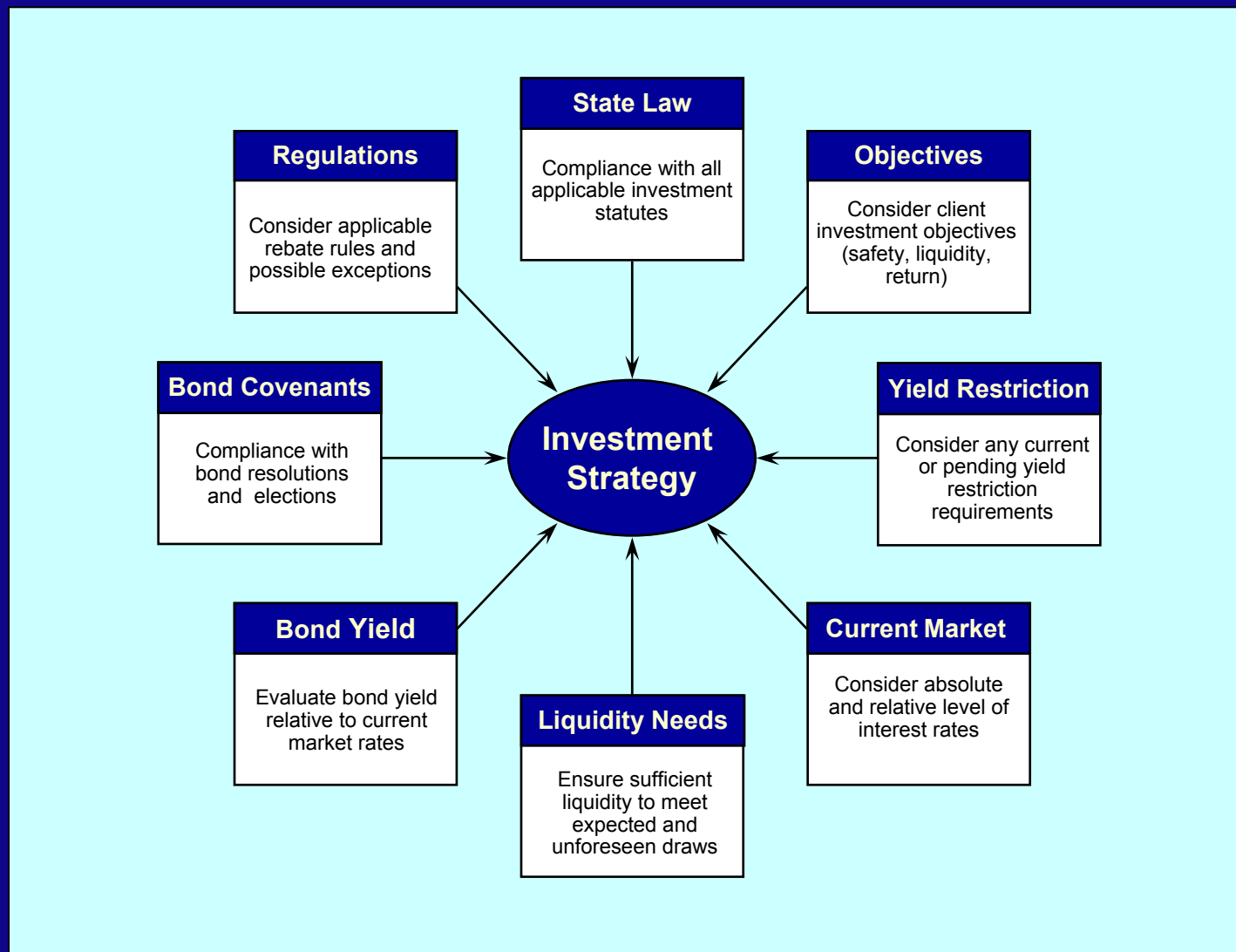
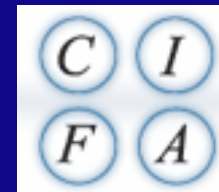
**Treasury Yield Curve**  
May 9, 2005 – May 9, 2006



**Trends Toward Positive Arbitrage**



# Investment Strategy



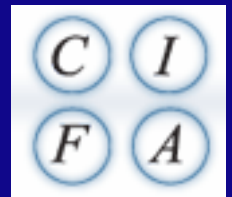
# Potential Risks

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- **Market Risk** – the risk that the invested proceeds will be needed by the SRF program sooner than expected, requiring the investment be liquidated or sold in a higher interest rate environment, resulting in loss of principal or original cash invested
- **Reinvestment Risk** - the risk that funds will not be needed as soon as planned and consequently the return will be lower for the subsequent time the funds are invested
- **Credit Risk** - the risk that the entity which holds the invested funds defaults or is downgraded resulting in a consequent loss of the original invested cash.

# Funds to Optimize



In general, a comprehensive investment strategy should be designed to focus a balanced management of both the assets and liabilities of the program

Generally, most of the assets of an SRF Program can be found in on of three funds:

## 1) Revenue / Equity / Recycled Funds – *(generally, unrestricted)*

Fund in which loan repayments and perhaps reserve deallocations are received and distributions for new loans deposits to reserves may be incurred

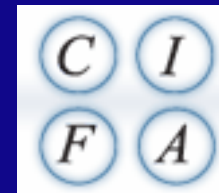
## 2) Construction Funds – *(generally, restricted)*

Program funds set aside for committed borrower loans

## 3) Reserve Funds – *(generally, restricted)*

Invested balances held as security for bonds

# Revenue / Equity / Recycled Funds



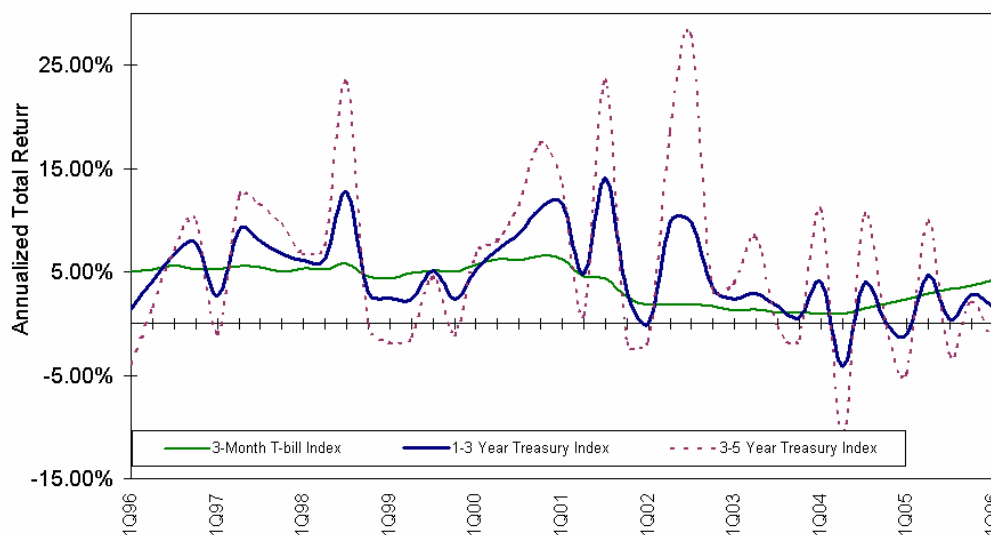
Very short-term portfolios minimize risk at the expense of return, while long-term portfolios pose significant risks with little gain.

**Risk/Return of Various Benchmarks**  
10 Years Ended 3/31/06

Merrill Lynch Index	Duration	Overall Return	Cumulative Value of \$100 Million	Quarters With Negative Returns
3-Month Treasury Bill	0.15 Years	3.83%	\$145,590,675	0 of 40
6-Month Treasury Bill	0.39 Years	4.02%	\$148,361,576	0 of 40
1 Year Treasury Index	0.89 Years	4.33%	\$152,864,825	1 of 40
1-3 Year Treasury Index	1.66 Years	4.79%	\$159,728,469	2 of 40
1-5 Year Treasury Index	2.27 Years	5.06%	\$163,887,534	6 of 40
3-5 Year Treasury Index	3.48 Years	5.66%	\$173,489,902	14 of 40

Source: Bloomberg--Merrill Lynch Indices

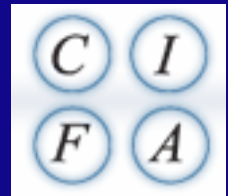
**Comparison of Annualized Quarterly Returns for Selected Benchmarks**  
3/31/96 to 3/31/06



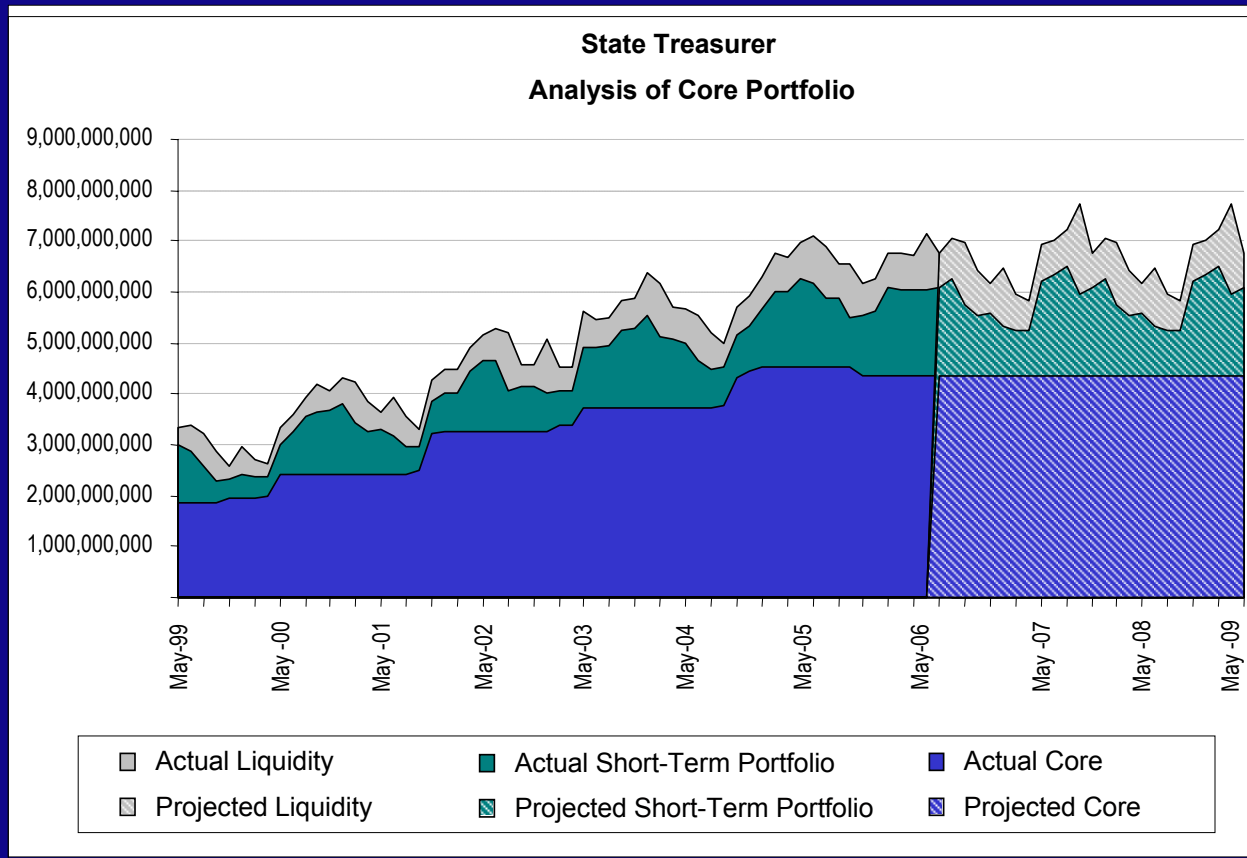
Source: Merrill Lynch Global Indices

SRF Programs should employ a strategy that realizes higher returns while meeting cash flow and liquidity needs

# Revenue / Equity / Recycled Funds

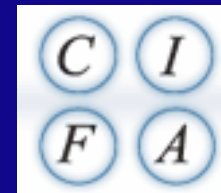


An optimal strategy might identify the funds that are not immediately needed for new loans or draws and would invest them on a longer horizon



# Construction Funds

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**Construction Funds are commonly deposited to short-term accounts to provide maximum liquidity and flexibility.**

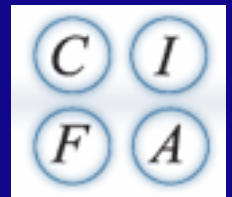
Strategies that allowed issuers to retain positive arbitrage earned Reserve Funds by offsetting negative arbitrage in the Construction Fund will need to be revised

## ***Opportunities:***

- *Spend-down exemption opportunities*
- *If investment maturities can be better timed to match drawdown needs, investment return can be improved.*

# Reserve Funds

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Historically, leveraged programs that maintain healthy Reserve Fund balances have invested in long term agreements designed to mature proportionally to specific bond issues

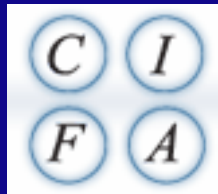
## **Challenges:**

- *Shrinking GIC Provider Market*
- *Arbitrage Rebate complexities computed by Series rather than by Program*
- *Periodic deallocation of invested Reserve Fund (long-term) into Equity Funds (short-term) may expose issuer to reinvestment rate risk*

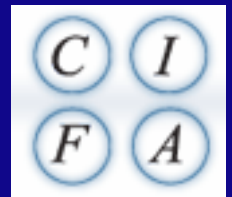
## **Opportunity:**

*Redesigning program to move monies outside of restriction*

# Current Active GIC Providers



	Short-Term Collateralized GIC				
	Short-Term Uncollateralized GIC		Long-Term Collateralized GIC		
	Long-Term Uncollateralized GIC				
<b>“AAA” Rated Providers</b>					
FSA	◆	◆	◆	◆	
MBIA	◆	◆	◆	◆	
Rabobank		◆		◆	
Trinity Plus Funding	◆	◆	◆	◆	Long-Term eligibility may be insurer limited
XL Capital Funding		◆		◆	
<b>“AA” Rated Providers</b>					
Aegon	◆	◆		◆	
AIG	◆	◆	◆	◆	Long-Term eligibility may be insurer limited
Bank of America	◆	◆	◆	◆	
Citigroup	◆	◆	◆	◆	Long-Term eligibility may be insurer limited
Depfa Bank		◆		◆	Long-Term eligibility may be insurer limited
IXIS		◆		◆	Long-Term eligibility may be insurer limited
RBC		◆		◆	
Wells Fargo		◆		◆	



# Methods Employed in NYS for Generating Additional SRF Program Capacity

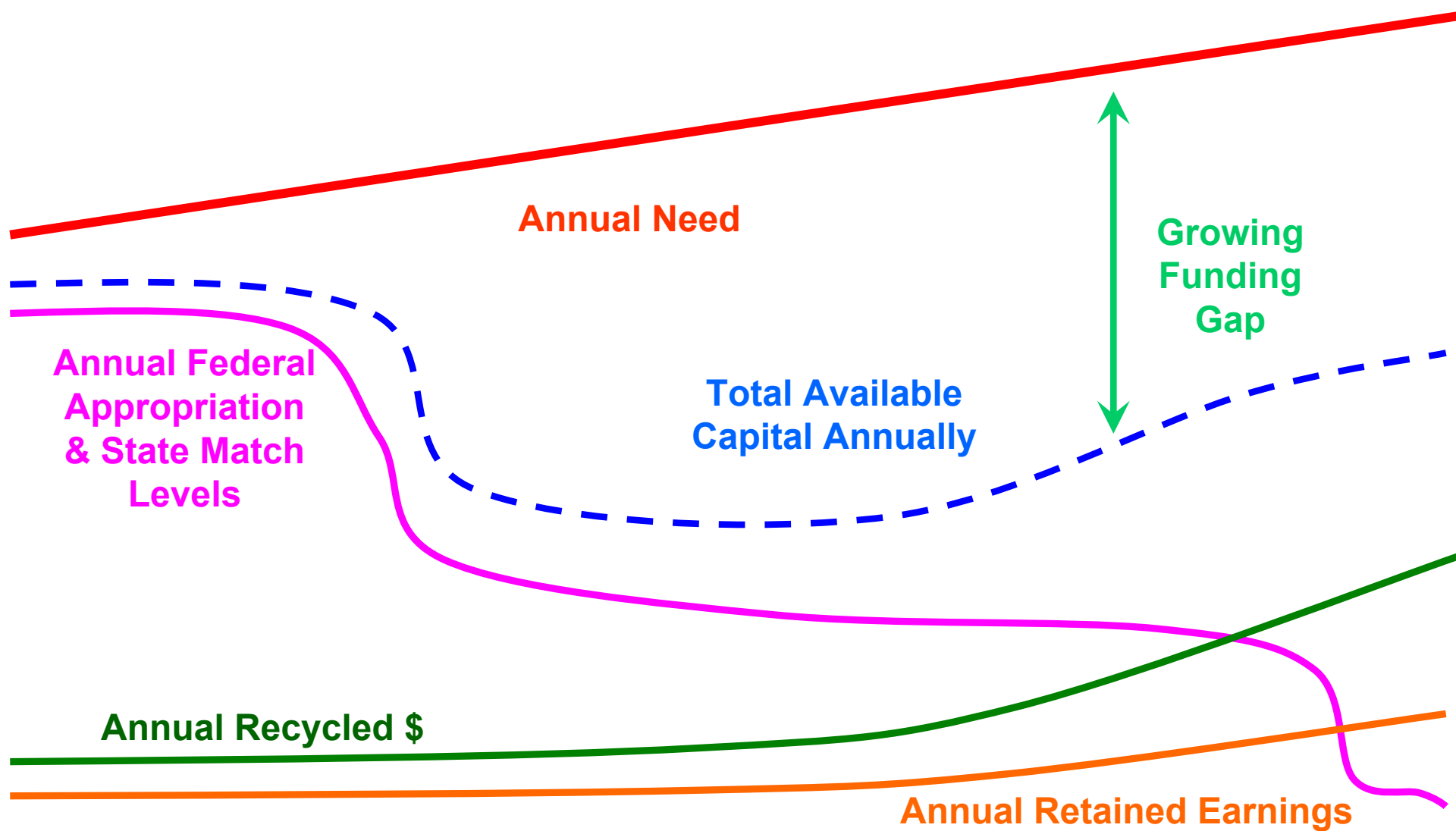
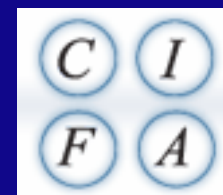
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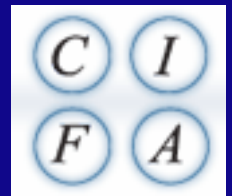
**New York State Environmental  
Facilities Corporation**

# SRF's Are Capacity Constrained Nationwide



Clean Water SRF Annual Cash Flows 1990 - 2005

# Factors Driving Change

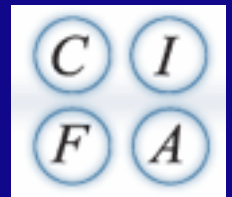


- Increasing Demand for Funding from the CWSRF & DWSRF Programs
- Reduced federal appropriations
- New emphasis on managing program capital for total return & long-term program growth
- Ease administrative burden associated with servicing financings



# Pre-2005 EFC SRF Reserve Model

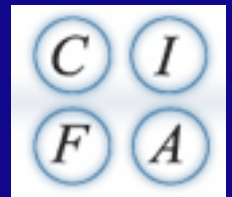
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- Required putting in place a “reserve fund” investment for each bond financing
- Earnings on reserve fund investments create subsidy for the recipients
  - 50% reserve allocation on CW projects
  - 33.33% reserve allocation on DW projects
- Recipients subsidy limited to allowable earnings on reserve fund investment
- Recipients assume the risk of fluctuations in level of reserve earnings
- Subsidy based on construction draws
- Reserves are reduced in proportion to repaid principal

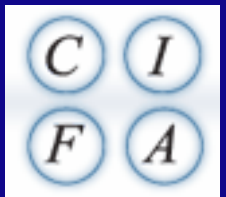
# Tax Implications of Reserve Fund Model

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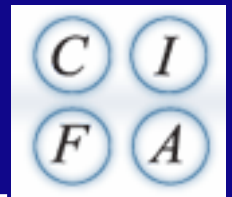
- Reserve fund investments serve as both a subsidy generator and a credit enhancement mechanism for EFC's SRF bonds
- Because reserve fund investments are pledged as security for our bonds, the earnings on such reserve funds are restricted by federal law to the arbitrage yield on EFC's bonds

# Build-up of Excess Reserves



- Prior to 2005, Master Trust Agreement (MTA) obligated EFC to provide a reserve fund investment of no less than 33.33% for each bond series funded with Senior Bonds
- Since 1992, CWSRF bonds had been issued with a pledged reserve fund investment of 50%, thereby increasing the subsidy benefit to 50% for each CWSRF recipient financing
- The use of a 50% subsidy (and pledged reserve) resulted in EFC having a much greater level of reserve funds than the MTA required, thereby creating excess credit capacity
- Goal became to capture this excess credit capacity and convert it into additional program dollars to use for more SRF financial assistance - *approximately \$230 million in “excess” reserves beyond the 1/3 requirement within the Master Financing Indenture*

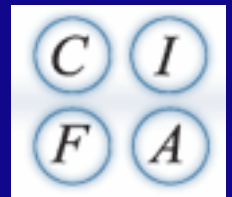
# Capturing the Excess Credit Capacity



- EFC issued debt under the MTA and Master Financing Indenture (MFI) with no reserve allocation
  - Bonds are subordinated to senior bonds issued under the MFI. Money released from the general reserve fund are only available to subordinated issue after that money has “cleared” all debt service and fund reserve requirements of senior MFI bonds
  - Reserve allocation requirement in the MTA amended to provide that there need not be a separate 33.33% reserve allocation for each recipients’ leveraged financing so long as the reserve allocations supporting all outstanding leveraged financings in the aggregate total at least 33.33% of the aggregate principal amount so funded.
  - Amendment accepted by the SRF trustee without the need for consent from bondholders

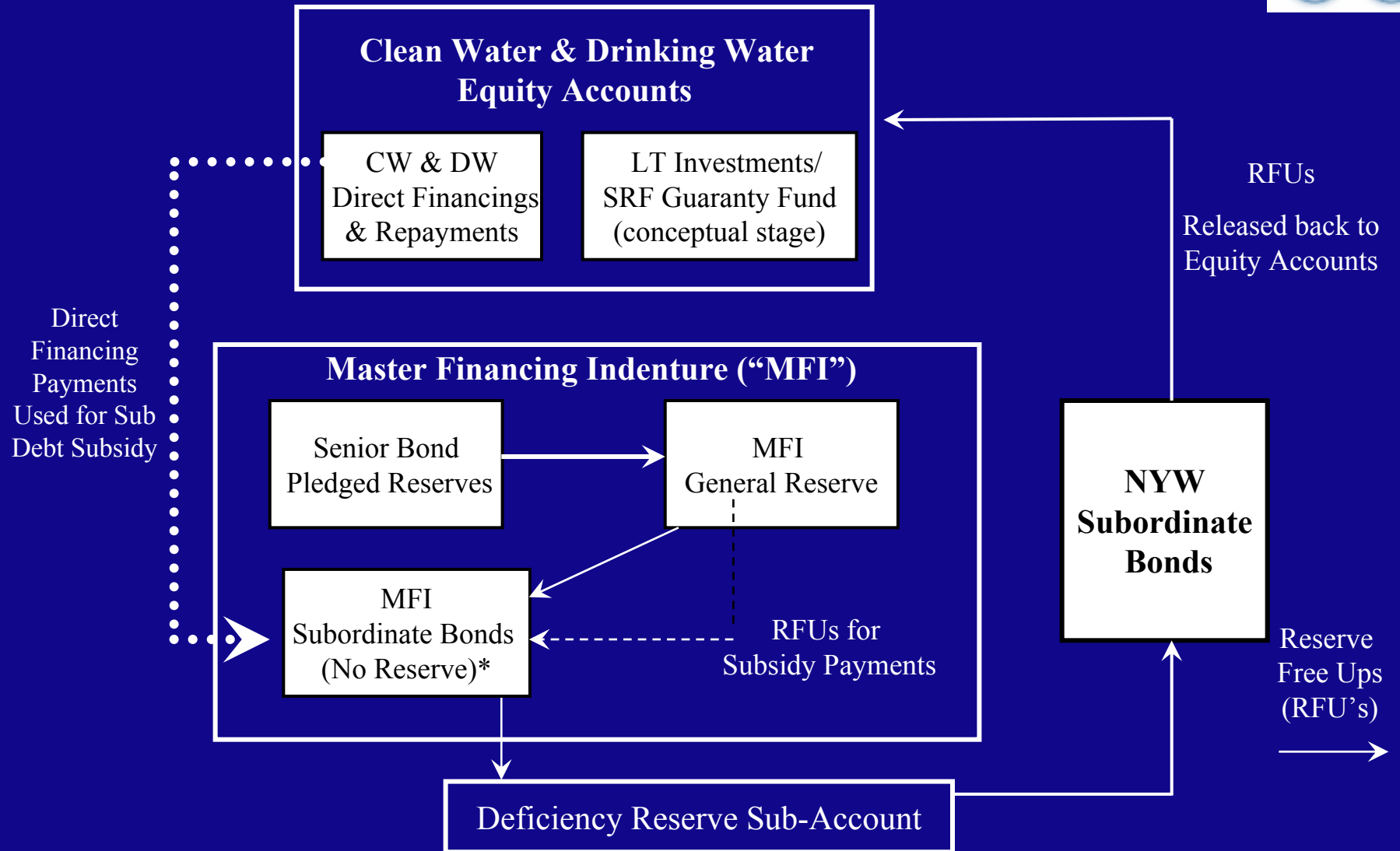
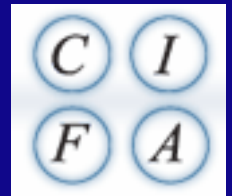
# Providing Subsidy Without the Benefit of Earnings from a Reserve Fund Investment

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- Alternative source of funds needed to be found to cover debt service subsidy
- Repayment stream from direct loan portfolio tapped
  - Pledge Agreement established with the trustee – direct loan repayments are deposited in pledged collection account and used to pay subsidy. Excess swept to Unallocated account after subsidy pay-out requirements are satisfied
  - Most direct loans issued at or near 0% interest, avoiding arbitrage issues
  - Free-up of reserves pledged to one or more prior bond issues is another potential source to cover subsidy obligation

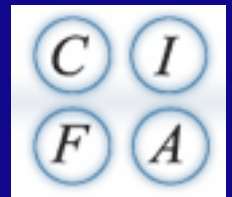
# SRF Capitalization Flow of Funds: Open Indenture (Post 2005 MFI Financing Model)



\* Subordinate debt issued without reserves provided; pledged reserves less committed subordinate debt obligations, must in aggregate, equal or exceed one-third of the outstanding amount of SRF bond financed recipient debt obligations

# Opportunities to Improve Program Capital Utilization Rates

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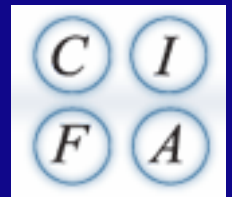
- Existing oversized reserves can now support bond financings without the need to “tie-up” additional capital
- Capital that would have been invested in arbitrage-constrained reserve investments can now be put to work in other unrestricted investments
  - Bet: Unrestricted earnings will more than offset the payout of program capital to satisfy subsidy payment obligations
  - EFC set a 10% capital savings objective for sub-debt financings
  - Capital savings achieved on first sub-debt transaction = 35%
- In effect, we have traded excess credit capacity for additional program capacity

# Other Program Changes & Efficiencies



- **New “Net Loan Rate” implemented**
  - Subsidy = Either 50% (CW) or 33.33% (DW) of the arbitrage rate on the bond issue that funds the recipient financings
  - Subsidy credit and Net debt service schedules set at closing – subsidy no longer has to be calculated each period based on amounts drawn.
  - This has created large administrative efficiencies
  - Recipients able to budget for future debt service liabilities with much greater certainty
  - Recipients no longer at risk for fluctuations in investment earnings
- Possible disadvantage for Program in taking on investment risk. It is possible that investment earnings, apart from the bond issue, will fail to match or exceed program funds used to pay subsidy credit

# SRF Program Investing Activities



- Initial Permitted Investments:

- Direct obligations of the United States or guaranteed by the U.S.
- Direct obligations of the State of New York or guaranteed by NYS
- Deposits with banks or trust companies, provided that such deposits are secured with direct obligations of the U.S. or New York State
- Tax-exempt obligations ( AA or better)
- Investment Agreements
  - Providers (banks, trust cos., broker dealers or insurance cos.) rated AA or better
  - Collateralized to at least 102% with direct obligations of the U.S. or agencies thereof

# SRF Program Investing Activities contd.



## Significant Statutory Additions to Investment Options

### ■2003:

- ◆ authority added to allow general SRF investment in obligations of, or fully guaranteed by U.S. govt. agencies or U.S. govt. sponsored corporations
- ◆ authority added to allow security and collateral related to GIC's to be invested in accordance with broader NYS statute (General Municipal Law section 10) governing deposits of public money. Added:
  - obligations issued or guaranteed by various international development banks
  - obligations insured or guaranteed by any agency of the US govt.
  - obligations issued by NYS municipal corporations, school districts, district corporations and public authorities of NYS
  - General obligation debt of other states' governmental entities
  - Obligations of domestic corporations
  - Mortgage related securities, and commercial paper

# SRF Program Investing Activities contd.



## Significant Statutory Additions to Investment Options

### ▪ 2005:

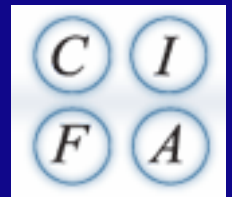
- ◆ Authority to invest under General Municipal Law section 10 extended to cover all SRF investment activities

### Opportunities

- Gives EFC more flexibility and opportunity vs. investing in Treasuries
- Allows EFC to take advantage of spreads between tax-exempt and taxable rates to improve total return
- Income required to offset liabilities can be generated with less program capital, freeing up funds for more project lending

# Other Investment Ideas

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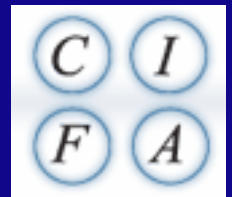


## ▪ Guaranteeing Direct Loan Portfolio

- ◆ Guarantee direct loan portfolio with assets of the SRF
- ◆ Achieve rating on direct loan portfolio that converts it to eligible investment under the MFI and MTA
- ◆ Allows the program to pledge direct loan portfolio as reserve
- ◆ Avoids a “hit” on existing excess reserve capacity

## ▪ Swap Opportunities

- ◆ Basis swap can generate growth in capital without “tying-up” program assets
- ◆ Provides hedge against market fluctuations and (in)ability to achieve desired spreads on investments
- ◆ Can also generate more capital for new project funding



# Rating Considerations for SRF Program Investments

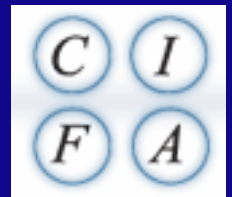
**Jim Wiemken**

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# Structured Ratings

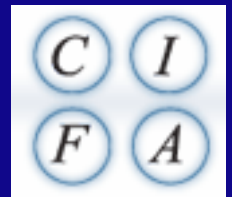
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- Typically either works or it doesn't-structured to a given rating level
- Any failed performance against stress case may force default
- All cash flows typically needed to warrant rating
- Strict provisions on investment rating quality, maturity matching, and interest rate risk
- Downgrade of GIC provider likely to trigger downgrade on bonds

# Operating Entity Ratings

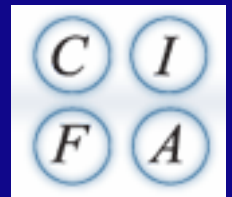
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- Flexibility to raise additional revenues
- Non-controlled revenues often not the dominant revenue stream
- Investment requirements follow prudent practice concept—generally investment grade
- Ability to manage different debt structures depends on management, liquidity, and flexibility

# Where Do SRFs Fit In?

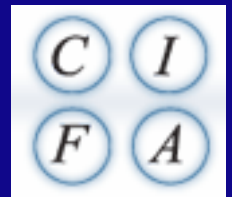
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- Viewed as hybrids
- Vast majority of revenues are non-controllable
  - Loans
  - Investments
- More strengths than traditional structured ratings
  - Ability to pledge new loans
  - Overfunded reserves
  - Large equity positions with future contributions likely
- Permitted investment criteria apply to pledged funds only

# SRF's Continued

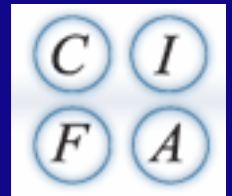
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- Permitted investment requirements fall to short term rating: A-1+ =AAA through AA-
- No mandates on assumed investment rates, maturity matching, and reinvestment assumptions, but risks are noted and monitored
- Investment provider downgrades or other issues may occur and SRF program still may be able to maintain its current rating.

# Protecting (Not Guaranteeing) against downgrades

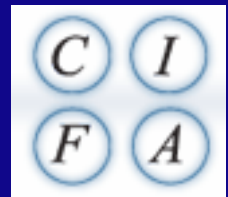
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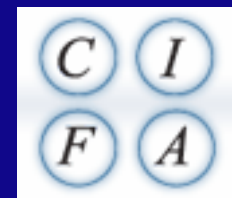
- Provisions upon a downgrade below permitted level:
- Substitute with higher rated provider willing to offer similar rates and terms
- Secure credit enhancement from an appropriately rated provider
- Collateralize the agreement in an amount sufficient to maintain the rating
- Provider should effect these remedies at their own cost

# Alternatives to Highly Rated Financial Institutions

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- Collateralized operating companies
  - Standardized document terms that allow for liquidation timelines and risks to be established
  - Sufficient assets posted to meet financial obligations based on market value haircuts sized to cover liquidation risks if early terminations occur.
  - Hypo Vereinsbank                      A/A-1
  - Hypo Public Finance Bank        AA+/A-1+



# Joint and Several Possibilities

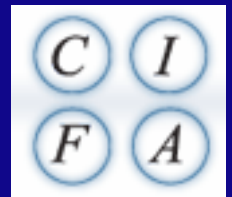
Both providers must each be fully and independently obligated for the entire amount and all terms and conditions under the agreements

## Medium Correlation Outcomes

	AAA	AA+	AA	AA-	A+	A	A-	BBB+	BBB	BBB-
AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA
AA+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+
AA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+
AA-	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A+	AAA	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA
A	AAA	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA	AA-
A-	AAA	AAA	AAA	AAA	AAA	AA+	AA+	AA+	AA	AA-
BBB+	AAA	AAA	AAA	AA+	AA+	AA+	AA+	AA	AA-	A+
BBB	AAA	AAA	AA+	AA+	AA+	AA	AA	AA-	A+	A
BBB-	AAA	AA+	AA+	AA	AA	AA-	AA-	A+	A	A-

# Concerns with Alternate Approaches

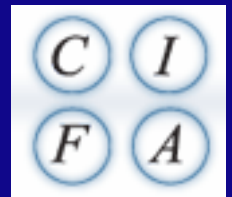
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- Rating level volatility increases as credit quality decreases
- Increased rating dependency—though not necessarily!

# Other Thoughts

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- Future use of equity
- More leverage/commitment reduces flexibility—moves closer to need for more structured analysis?
- First test going forward: continue to survive default/stress tests
- Additional flexibility combined with tighter margins probably requires one of two items:
  - More structured approach
  - Management must demonstrate itself capable of acting prudently and quickly in an increasingly dynamic environment