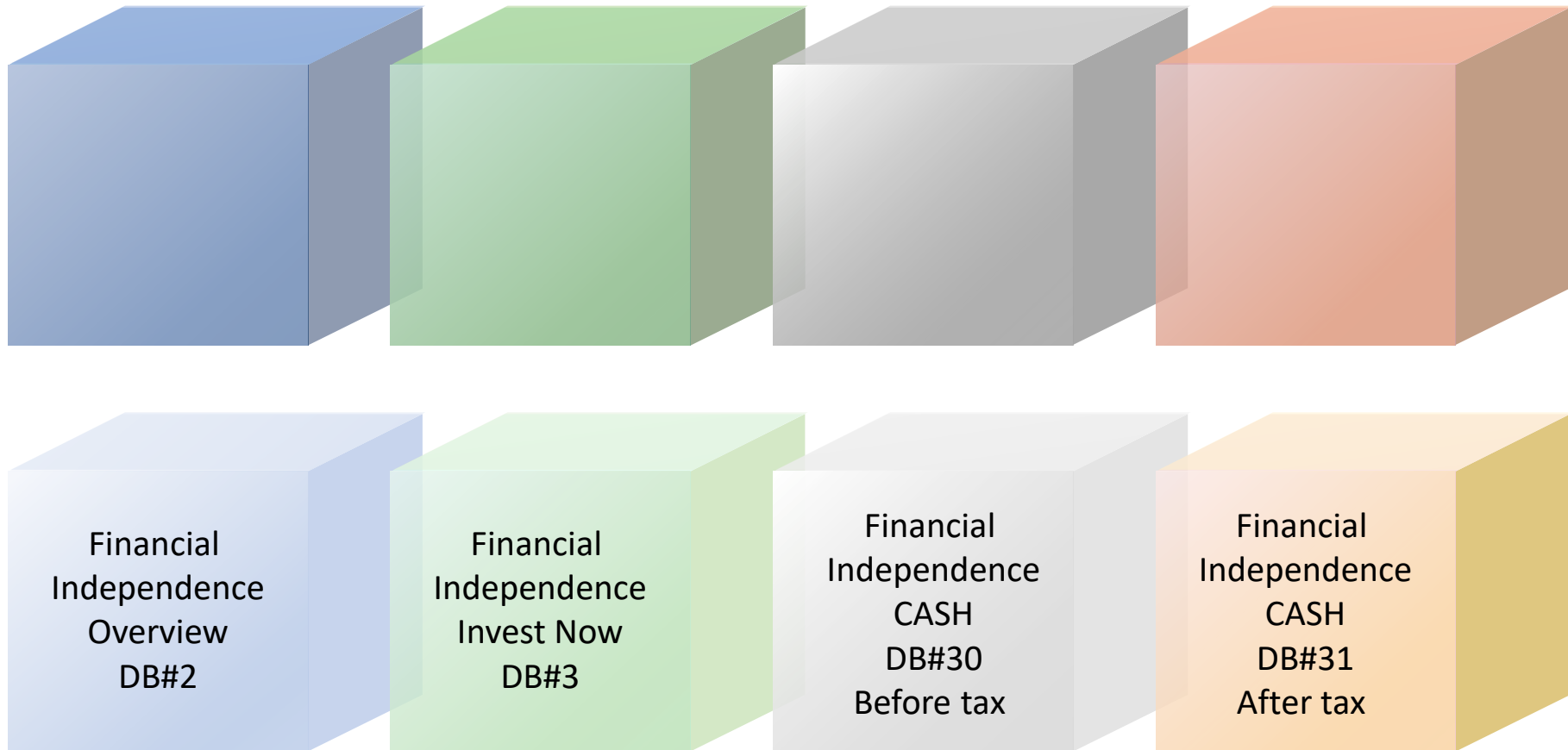


# Financial Independence Building Blocks

CASH EQUIVALENTS after taxes & expenses ... DB#31

*How might I invest the money I know I will spend in the next 5 years?*

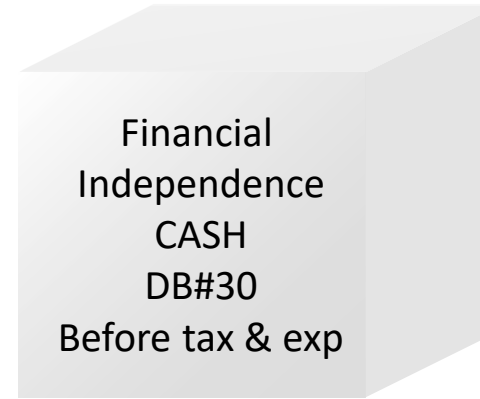


# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax



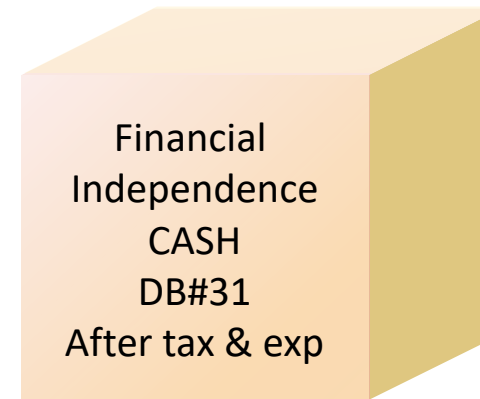
= Review of everything  
you need to understand  
this 'tool called money'



= I'm going to spend this  
money in the next 5  
years, I need some  
growth and safety.  
(in a before tax account)



= You might say, "I  
don't care, just tell me  
how to invest now"



= I'm going to spend this  
money in the next 5  
years, I need some  
growth and safety.  
(in an after tax account)

**THIS DEEPER BLOG ...DB#31, skip to p14 if you want to know changes I make as a result of this study.**

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

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You are responsible for your actions and smart decisions and do your own research!

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0–5-YEAR BUCKET

---

CASH OR CASH EQUIVALENT  
INVESTMENTS

02

6–10-YEAR BUCKET

---

MODERATE RISK  
INVESTMENTS

03

10+ YEAR BUCKET

---

HIGHER RISK  
INVESTMENTS

*Why buckets? To help you sleep at night, you will be able to invest more aggressively with the money that you do not need any time soon.*

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

---

CASH OR CASH EQUIVALENT  
INVESTMENTS

We will focus here.

This will present alternatives to holding 3 – 5 years of income in CASH.

If you are doing a ‘Roth Conversion Ladder’. These would be options for money that you will ‘live on’ as you convert your 401K/Traditional IRA to Roth IRA instead of holding CASH.

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT  
INVESTMENTS

I am often asked – How do I get a better return on the money I will need soon?

First, anything outside of CASH is likely to be higher risk.

Second, you are unlikely to get ‘hurt’ by inflation because you will spend it soon.

With the obvious out of the way, I will look at a process to ‘assess the risk’.

I will walk through the process with EXAMPLES.

I will look at each of the SEVEN (7) methods and assess their performance over:

- 1) A turndown period (2008 – 2012)
- 2) A turnup period (2015 – 2019)
- 3) On an average return basis (using 20-year average return)

I will *attempt* to simplify of this with a SIMPLE SINGLE RATIO

SIMPLE  
SINGLE  
RATIO  
=  
REWARD  
-----  
RISK

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT INVESTMENTS

SIMPLE  
SINGLE  
RATIO  
=  
REWARD  
-----  
RISK

=

REWARD = Average 20-year return for 5 years

\_\_\_\_\_

RISK = 1-year max drop in the last 20 years

**Goal:** *to maximize this ratio for your short-term investment needs*

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT INVESTMENTS

METHOD 1 = Leave it in CASH

METHOD 2 = Leave it invested until you withdraw it for spending

METHOD 3 = Leave it in a municipal fund until withdrawal (VWIUX/VWITX)

METHOD 4 = Leave it in a 40% stock / 60% bond until withdrawal (VWINX/VWIAX)

METHOD 5 = Take bucket 1 & divide it into 3 more buckets until withdrawal

METHOD 6 = METHOD 4 replace VTSAX with Dividend stocks fund

METHOD 7 = METHOD 4 replace VTSAX with specific Dividend stock

### Assumptions:

Working to keep the math as simple as possible ... using [www.portfoliovisualizer.com](http://www.portfoliovisualizer.com)

ANALYSIS using [portfoliovisualizer.com](http://portfoliovisualizer.com) and all dividends included.

\$1M total portfolio using 4% rule, yearly spend rate of \$40,000/year.

For this bucket of money, you will be pulling way more than 4% rule, so expect it to reduce.

Bucket 1 = \$40K X 5 = \$200K total.

Withdrawals are monthly at \$40K/12 = \$3.3K/month.

Rebalance annually and not inflation adjusted. CASH = CASHX.

VTSMX substituted for VTSAX for 20-year average returns. VWINX for VWIAX as well.

AFTER TAX: Fidelity/Vanguard sites: Highest marginal tax rate, no state taxes included and "After taxes on distributions and sale of fund shares - 5yrs"

START : \$200,000 CASH

MATH: \$200,000 - \$40,000 X 5 YEARS

END: \$0 *Can we beat this?*





# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01  
0-5-YEAR BUCKET  
CASH OR CASH EQUIVALENT INVESTMENTS

For Example:

Using Method 2 Leave it invested until you need the money (invested in VTSAX)

(Method 1 – Leave it in CASH is self-explanatory Ratio is set to 1 – remember inflation is not included due to shorter 5-year timeframe)

**SIMPLE  
SINGLE  
RATIO  
=  
REWARD  
-----  
RISK**

$$\text{SS RATIO} = \frac{5\% \text{ (avg 20-year return)} \times 5 \text{ years}}{37\% \text{ (max 1-year drop)}} = 0.7$$

**Goal:**  
*To maximize this ratio for your short-term investment needs*

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01  
0-5-YEAR BUCKET  
CASH OR CASH EQUIVALENT INVESTMENTS

For Example:

Using Method 2 Leave it invested until you need the money (invested in VTSAX)

(Method 1 – Leave it in CASH is self-explanatory Ratio is set to infinite – remember inflation is not included due to shorter 5-year timeframe)

	Method 1	Method 2	
<b>Non taxable Account</b>	CASH	VTSAX	
	CASH	100% stocks	WANT:
Simple Single Ratio (SSR)	INFINITE	1.1	Max
Drawdown period (2008 - 2012) - Dollars left at end of 5 years	\$0K	lasts < 5 yrs, ~ 4 years	OK if >\$10K
Drawup period (2015 - 2019) - Dollars left at end of 5 years	\$0K	\$61K	Max
Using Average 20 year return for 5 years	\$0K	\$40K	Max
Average 20 year return assumption	very small	8.0%	Max

No inflation, No expense impact, No tax impact

	Method 1	Method 2	
<b>Taxable Account</b>	CASH	VTSAX	
	CASH	100% stocks	
Simple Single Ratio (SSR) after tax	INFINITE	0.7	
Drawdown period (2008 - 2012) - Dollars left at end of 5 years	\$0K	lasts < 5 yrs, ~ 3.5 years	
Drawup period (2015 - 2019) - Dollars left at end of 5 years	\$0K	\$23K	
Using Average 20 year return for 5 years	\$0K	\$24K	
Average 20 year return assumption	very small	5.2%	

No inflation, No expense impact, with tax & sales impact

In this Method 2:  
100% in VTSAX  
  
You might run out of money in 4 years in non-taxable account and ~3.5 years in taxable account

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01  
0-5-YEAR BUCKET  
CASH OR CASH EQUIVALENT INVESTMENTS

	Method 1	Method 2	Method 3	Method 4	Method 5	Method 6	Method 6A	Method 6B	Method 7	Method 7A	Method 7B	
	CASH	VTSAX	VWITX	VWIAX/VWINX	Split 3	Split 3 + divid fund	Split 2 + divid fund	Split 2 + divid fund	Split 3 + divid stock + REIT	Split 2 + muni + REIT (DLR)	Split 2 + muni + REIT (VGSIX)	
	CASH	100% stocks	100% Muni Bond	40% stocks / 60% Bond	25% VWITX / 25% VTSAX / 50% VWIAX	25% VWITX / 25% VDIGX / 50% VWIAX	50% VWITX / 50% VDIGX	30% VWITX / 70% VDIGX	20% VWITX / 40% LOW/ 40% VGSIX	20% VWITX / 80% DLR	50% VWITX / 50% VGTIX	<b>WANT:</b>
Simple Single Ratio (SSR) after tax	INFINITE	0.7	13.5	2.6	0.6	0.8	N/A	N/A	3.0	3.0	2.0	Max
Drawdown period (2008 - 2012) - Dollars left at end of 5 years	\$0K	lasts < 5 yrs, ~ 3.5 years	\$24K	lasts < 5 yrs, ~ 4.9 years	lasts < 5 yrs, ~ 4.7 years	last < 5 yrs	last < 5 yrs	last < 5 yrs	lasts < 5 yrs, ~ 4.5 years	\$35K	lasts < 5 yrs, ~ 4.9 years	OK if >\$10K
Drawup period (2015 - 2019) - Dollars left at end of 5 years	\$0K	\$23K	\$12K	lasts < 5 yrs, ~ 4.7 years	N/A	N/A	N/A	N/A	\$15K	\$70K	\$13K	Max
Using Average 20 year return for 5 years	\$0K	\$24K	\$19K	\$24K	\$7K	\$7K	N/A	N/A	\$53K	\$65K	\$38K	Max
Average 20 year return assumption	very small	5.2%	4.2%	5.2%	1.6%	1.8%	N/A	N/A	9.9%	11.7%	7.5%	Max

No inflation, No expense impact, No tax impact

Simplest

Highest risk & potential value

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT  
INVESTMENTS

### Conclusions

If you are in a tax advantaged account and would like to do better than leaving your money in cash, there are two options presented here:

**1. *The simplest*** - put the money in VWITX/VWIUX

Simple Single Ratio ~ 13.5, after spending \$40K/year for 5-years in a starting with an account funded to \$200K, you will have ~\$12K\* - \$24K\* left over to spend.

**2. *The most gain & risk, yet most complex*** – put 20% in VWITX, 80% in DLR stock.

Simple Single Ratio ~ 3, after spending \$40K/year for 5-years starting with an account funded to \$200K, you will have ~\$35K\* - \$70\* left.

\*The range is the 5-year period starting in the last turndown (2008-2012) and 5 year period starting in the last turnup (2015-2019). 12

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax **SIMPLIER**

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT INVESTMENTS

Non taxable Account	Method 4	Method 7A	WANT:
	WINX / VWIAX	20% VWITX / 80% DLR	
	40% stocks / 60% Bond	80% stocks / 20% Bond	
Simple Single Ratio (SSR)	3.9	4.0	
Drawdown period (2008 - 2012) Dollars left at end of 5 years	\$22K	\$101K	Max
Drawup period (2015 - 2019) - Dollars left at end of 5 years	\$32K	\$127K	OK if >\$10K
Average of drawdown & drawup	27	114	Max
Initial amount	200	200	Max
Percentage of initial amount left after \$40K/year spend	<b>14%</b>	<b>57%</b>	Max

Taxable Account	Method 3	Method 7A	WANT:
	VWITX	20% VWITX / 80% DLR	
	100% Muni Bond	80% stocks / 20% Bond	
Simple Single Ratio (SSR) after tax	13.5	3.0	
Drawdown period (2008 - 2012) Dollars left at end of 5 years	\$24K	\$35K	Max
Drawup period (2015 - 2019) - Dollars left at end of 5 years	\$12K	\$70K	OK if >\$10K
Average of drawdown & drawup	18	52.5	Max
Initial amount	200	200	Max
Percentage of initial amount left after \$40K/year spend	<b>9%</b>	<b>26%</b>	Max

**Target a high SSR ratio of 5-year gains over single year loss**

**Method 4** – 40% stock/60% Bond (VWINX/VWIAX)– steady & low risk

**Method 7A** – 20% Muni-bond / 80% single stock (DLR) – higher gains & much higher risk

**Target a high SSR ratio of 5-year gains over single year loss**

**Method 3** – 100% Bond (VWIUX/VWITX)– steady & low risk

**Method 7A** – 20% Muni-bond / 80% single stock (DLR) – higher gains & much higher risk

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT  
INVESTMENTS

### ***Some thoughts & Experience –***

*This is more a study of ranges & exact numbers, hopefully enough to get you started. Considerations not recommendations.*

***We could chase further returns...there is a reason it is difficult to find AFTER tax calculators, this stuff takes time.***

*For years I used an approach in an after-tax account that I knew I would spend to zero while I did the 'Roth conversion ladder', allocating 2/3 actual cash & 1/3 select dividend paying stocks. I later became more 'aggressive' by ¼ actual cash, 1/3 selected dividend paying stocks & ~ 2/5 WVINX/VWIAX. Both of these are simplified & simulated in the Methods presented.*

*Observation: You will need key selected dividend paying stocks that perform like DLR to win and this is unlikely.*

*Method 7B also gives a glimpse of the impact of being in a lower tax bracket with 15% capital gains instead of 20% with an REIT fund tax rate of 13%. Even at a lower tax rate this is at best equivalent to VWIUX/VWITX.*

***To beat VWIUX/VWITX you need a very high performing stock with little downside.***

***Keep looking if you like ...***

***My lessons: Shift 'I will spend it in the next 5 years after tax account' to VWIUX/VWITX & wait for DLR to go 'on sale'.***

# FI Building Blocks

CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT  
INVESTMENTS

## APPENDIX

*- How I calculated the impact of FEDERAL TAX*

# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT INVESTMENTS

### *How did I calculate the impact of AFTER federal tax?*

I created a 'Rate of Return reduced by Taxes'

Using Fidelity/Vanguard data returns without taxes to 'Highest marginal tax rate, no state taxes included and "After taxes on distributions and sale of fund shares - 5yrs"

		Rate of Return reduced by Taxes*		AVG 20 yr return reduced	
				From Before Tax	To: After Tax
VWIAX	VWINX	30%	40% stock / 60% bond	7.6%	5.2%
VDIGX		25%	100% dividend stock fund	8.9%	6.7%
VTSAX		23%	100% stock	8.0%	5.2%
STOCK		20%	actual stock LOW	16.0%	13%
STOCK		20%	actual stock DLR	16.7%	13%
VGSLX	VGSIX	13%	100% REIT	12.8%	10%
VWIUX	VWITX	5%	100% tax exempt bond	4.4%	4.2%



# FI Building Blocks

## CASH EQUIVALENTS ... DB#31 AFTER Tax

01

0-5-YEAR BUCKET

CASH OR CASH EQUIVALENT INVESTMENTS

For Example:

VTSAX

VTSAX	1 Yr	3 Yrs	5 Yrs	10 Yrs	Life
<b>Before Taxes</b>					
Vanguard Total Stock Market Index Fund Admiral Shares	6.45%	10.03%	10.02%	13.73%	9.64%
CRSP US Total Mkt Index	6.47%	10.04%	10.03%	13.71%	--
Vanguard Spliced Total Stock Market Index	6.47%	10.04%	10.03%	13.74%	--
Large Blend	3.74%	8.15%	8.35%	12.22%	--
<b>After Taxes on Distributions</b>					
Vanguard Total Stock Market Index Fund Admiral Shares	5.95%	9.42%	9.37%	13.12%	6.32%
Large Blend	1.91%	6.19%	6.54%	10.68%	--
<b>After taxes on distributions and sale of fund shares</b>					
Vanguard Total Stock Market Index Fund Admiral Shares	4.12%	7.63%	7.72%	11.32%	5.53%
Large Blend	2.54%	5.83%	6.09%	9.70%	--
	92.0%	93.8%	93.4%	95.7%	
	63.7%	76.0%	77.0%	82.6%	
	8.0%	6.2%	6.6%	4.3%	
	36.3%	24.0%	<b>23.0%</b>	17.4%	

I then applied this 'After taxes on distributions & sale of share funds' to portfolio analyzer.com returns of the stated periods. See FI\_CASH\_EQUIV\_71620\_rev3\_wTAX\_72320.xlsx