

Optimization Asset Classes (WIP)

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Overview

This page covers two possible ways of creating optimization asset classes for use by the new Architect optimization tool.

The Verus CMA's can be found here <https://www.verusinvestments.com/wp-content/uploads/2022/12/2023-Capital-Market-Assumptions.pdf>

Pros/Cons

In subsequent sections we discuss possible asset class mappings between the existing Architect asset classes and the new optimization asset classes/sub asset classes which are required to support the new optimization tool. We summarize the pros and cons of these approaches here.

1. Mapping consistent with existing Architect asset classes

- ✓ When a user views optimized holdings/asset classes the results will be consistent with asset classes displayed in builder (on the asset's card) and on the analysis page dial
- ? What should be the UX of the "Other" asset class? I think it would be very strange to recommend that an investor increase their allocation to "Other". One possibility is we can map "Other" assets to a different asset class like "Mixed Allocation" during optimization, but this might lead to weird UX when the user goes back to the analysis page and sees "Other" again. Similarly what should be the behavior of Alternatives - Real Assets (Other)?
- ✗ Some Architect asset classes do not have a reasonable building block to fill their allocation. We would need to create new building blocks
- ✗ Some Architect asset classes represent fund types that are uncommon. There could be cases where a user is recommended a fund type that they are unable to allocate to. For example a user could be recommended to allocate to an infrastructure fund, but there are no infrastructure funds available on marketplace/architect to allocate to
- ✗ CMA providers will not be able to support all asset classes

2. Mapping that is not consistent with existing Architect asset classes

- ✓ Has a building block associated with each asset class (although it might be a good idea to make more anyway)
- ✓ Can guarantee that for each asset class there will be an actual fund available for the user to select
- ? Less risk that CMA providers will not support a given asset class (but no way to eliminate this risk entirely). Envestnet would be able to cover all of the asset classes proposed on this doc.
- ✗ When a user views optimized holdings/asset classes the results will be inconsistent with builder + analysis page dial
- ✗ Mapping certain Architect asset classes to an optimization asset class could be strange. For example, which asset class should mixed allocation map to?
- ✗ Requires an additional map to support custom asset class → optimization asset class

Mapping Consistent with Existing Architect Asset Classes

Below is a proposal that is consistent with existing architect asset classes. The requirement here is that any optimization (sub) asset class should be a finer granularity of existing asset classes.

In some cases I am creating finer granularity but then grouping these finer asset classes in different logical buckets. For example the existing commodities asset class is broken down to private commodities and (public) commodities, then private commodities is bucketed in “Alternatives” while (public) commodities are given their own asset class.

Optimization Asset Class → CMA + Building Block

Asset Class	Sub-asset Class	Envestnet CMA	Envestnet Proxy	Verus CMA	Verus Proxy	Architect Building Blocks (First one listed should be default)
Equities	U.S. Equities	All Cap	Russell 3000 TR USD	U.S. Large	S&P 500	US Large Cap, US Small Cap, US Consumer Discretionary, US Consumer Staples, US Health Care, US Financial Sector, US Information Technology, US Telecommunication Services, US Utilities, US Real Estate, US Energy
	Non-U.S. Developed Equities	Int'l Developed Mkts	MSCI EAFE NR USD	International Developed	MSCI EAFE	Europe, Asia
	Emerging Markets Equities	Int'l Emerging Mkts	MSCI EM GR USD	Emerging Markets	MSCI EM	Emerging Markets
Fixed Income	U.S. Fixed Income	Intermediate Bond	Barclays US Govt/Credit Interm TR USD	Core Fixed Income	Bloomberg U.S. Aggregate Bond	US Treasury Notes, US Investment Grade Corporate Bonds, US Treasury Bonds, US Municipal Bonds, US Government Agency Bonds, US Mortgage-Backed Securities, US Treasury Bills,

						US Corporate Bonds High Yield
	Non-U.S. Developed Fixed Income	International Bond	Citi WGBI NonUSD USD	Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	Duplicate US Fixed Income?
	Emerging Markets Fixed Income	Emerging-Markets Bond	JPM EMBI Global TR USD	Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	Duplicate US Fixed Income?
Commodities		Commodity	DJ UBS Commodity TR USD	Commodities	Bloomberg Commodity	Commodity
Cash and Cash Equivalents		Cash	Citi Treasury Bill 3 Mon USD	Cash	30 Day T-Bills	Cash
Structured Investments	Growth					Medium-Term Market Linked Growth Note, Short-Term Market Linked Growth Note, Long-Term Market Linked Growth Note
	Income					Medium-Term Callable Market Linked Income Note, Short-Term Market Linked Income Note, Long-Term Market Linked Income Note
Alternatives	Private Equity	Private Equity	Russell 2000 TR	Private Equity	CA U.S. Private Equity	Private Equity
	Private Credit	Private Credit	S&P/LSTA Leveraged Loan	Private Credit	S&P LSTA Leveraged Loan Index	Private Credit
	Private Real Estate	Private Real Estate	FTSE NAREIT Equity REITs TR	Core Real Estate	NCREIF Property	Private Real Estate
	Real Assets (Other)					Private Real Estate?
	Hedge Funds	Alternative	HFRX Global Hedge Fund Index	Hedge Funds	HFRI Fund Weighted Composite	Macro Hedge Fund, Event Driven Hedge

						Fund, Credit Hedge Fund
	Private Commodities					Commodities?
	Infrastructure			Global Infrastructure	S&P Global Infrastructure	Commodities?
	Digital Assets					Commodities?
Other						
Liquid Alternative						
Mixed Allocation		Balanced	60% Russell 1000/40% LB Govt/Credit Interm.			

Architect Asset Class → Optimization Asset Class

Architect Asset Class	Optimization Asset Class	Xignite Global Category	Marquee Asset Class	Fund Master Asset Class/Strategy	Contract Parameters	Additional Notes
Equity	Equities - U.S. Equities	United States Large Cap Growth Equity, United States Mid Cap Equity, Financials Equity, United States Large Cap Blend Equity, United States Large Cap Value Equity, United States Small Cap Equity, United States Equity, Consumer Goods & Services Sector Equity, Utilities Equity, Health Care Equity, Technology Equity, Communication Services Equity, Industrials Equity, United States Small Mid Cap Equity, Natural Resources Sector Equity , Energy Equity , Precious Metals Equity, Miscellaneous Equity Other, Basic Materials Equity, Consumer Cyclical Equity,				

		Consumer Defensive Equity				
Equity	Equities - Non-U.S. Developed Equities	Global Large Cap Blend Equity, Global Small Mid Cap Equity, Japan Equity, Europe Large Cap Blend Equity, India Equity, Global Large Cap Value Equity, Global Large Cap Growth Equity, Asia ex-Japan Equity, Greater China Equity, Europe Small Mid Cap Equity, Asia Equity, Latin America Equity, Canada Large Cap Equity, Africa Equity, Taiwan Equity, Australia/New Zealand Equity, Brazil Equity, Malaysia Equity, Mexico Equity, Singapore Equity, Korea Equity, Thailand Equity, United Kingdom Large Cap Blend Equity, Global Equity, Global Small Cap Equity, Europe Equity, Canada Small Mid Cap Equity, Israel Equity, United Kingdom Small Mid Cap Equity, Australia Equity,				Creating a new building block could be nice to have
Equity	Equities - Emerging Markets Equities	Global Emerging Markets Equity, Emerging Markets Equity, Europe Emerging Markets Equity				
Fixed Income	Fixed Income - U.S. Fixed Income	United States Fixed Income, United States Municipal Fixed Income, Convertibles, Long Term High Quality Fixed Income, Intermediate Term High Quality Fixed Income, Other Fixed Income, United States Municipal California Tax				

		Preferred, Short Term Low Quality Fixed Income, Long Term Low Quality Fixed Income				
Fixed Income	Fixed Income - Non-U.S. Developed Fixed Income	Global Fixed Income, Europe Fixed Income, Asia Pacific Fixed Income, Asia Fixed Income, Canada Fixed Income,				Creatin g a new building block could be nice to have
Fixed Income	Fixed Income - Emerging Markets Fixed Income	Global Emerging Markets Fixed Income				Creatin g a new building block could be nice to have
Mixed Allocation	Mixed Allocation	Tactical Allocation, United States Target Date Allocation, Moderate Allocation, Cautious Allocation, Aggressive Allocation, Allocation, Target Date Allocation, Canada Target Date Allocation, Global Target Date Allocation				No reason able building block. I think we have to make a new one.
Commodi ty	Commodity	Other Commodities, Precious Metals Commodities, Agriculture Commodities, Commodities Energy				
Cash and Cash Equivalen ts	Cash and Cash Equivalents	United States Money Market, Short Term High Quality Fixed Income, Canada Money Market, Mexico Money Market If the assets exist in Xignite data feed, also need to check Xignite asset type. If Xignite asset type is Money Market , then it should				

		have Cash and Cash Equivalents as asset class, regardless of the Global Category.				
liquidAlternative	Liquid Alternatives	Market Neutral Strategy Alternative, Long-Short Strategy Alternative, Long-Short Equity, Multi Alternative , Other Multi Alternative, Currency Alternative				No reasonable building block. I think we have to make a new one.
Hedge Fund	Alternatives - Hedge Funds	Hedge Fund (Key: hedge_fund)				
Real Asset (Other)	Real Assets (Other)			Private Capital-Real Assets (Key: private_capital_ra) Impact (key: impact), Others (key: other)		
Real Estate	Alternatives - Real Estate					
Infrastructure	Alternatives - Infrastructure			Private Capital-Real Asset (Key: private_capital_ra) Infrastructure (key: infrastructure)		No reasonable building block. I think we have to make a new one.
Private Credit	Private Credit			Private Capital-PC (Key: private_capital_pc)		
Private Equity	Private Equity			Private Capital-PE (Key: private_capital_pe)		

Digital Assets	Alternatives - Digital Assets		Digital Asset, Cryptocurrency	Digital Assets (key: digital_asset);		
Other	Other	Trading Tools , Miscellaneous	Fund (w/o Global Category or Fund Master Category), FX, Econ, Social, xAsset, Loan?			
Structured Investment	Structured Investment Growth		Structured Investment, Cross Asset		Contract Type Name (requires investigation). If not able to categorize by Contract Type Name try to infer from displayName. If not possible default to Growth	
Structured Investment	Structured Investment Income		Structured Investment, Cross Asset		Contract Type Name (requires investigation). If not able to categorize by Contract Type Name try to infer from displayName. If not possible default to Growth	

Historical Optimization Asset Class Mapping

TBD

Mapping Not Consistent with Existing Architect Asset Classes

Below is a proposal that is not consistent with existing architect asset classes

Optimization Asset Class to CMA + Building Block Map

Asset Class	Sub-asset Class	Envestnet CMA	Envestnet Proxy	Verus CMA	Verus Proxy	Architect Building Block
Equities	U.S. Equities	All Cap	Russell 3000 TR USD	U.S. Large	S&P 500	US Large Cap, US Small Cap, US Consumer Discretionary, US Consumer Staples, US Health Care, US Financial Sector, US Information Technology, US Telecommunication Services, US Utilities, US Real Estate, US Energy
Equities	Non-U.S. Developed Equities	Int'l Developed Mkts	MSCI EAFE NR USD	International Developed	MSCI EAFE	Europe, Asia
Equities	Emerging Markets Equities	Int'l Emerging Mkts	MSCI EM GR USD	Emerging Markets	MSCI EM	Emerging Markets
Fixed Income	U.S. Fixed Income	Intermediate Bond	Barclays US Govt/Credit Interm TR USD	Core Fixed Income	Bloomberg U.S. Aggregate Bond	US Treasury Notes, US Investment Grade Corporate Bonds, US Treasury Bonds, US Municipal Bonds, US Government Agency Bonds, US Mortgage-Backed Securities, US Treasury Bills, US Corporate Bonds High Yield

Fixed Income	Non-U.S. Developed Fixed Income	International Bond	Citi WGBI NonUSD USD	Global Sovereign ex U.S.	Bloomberg Global Treasury ex U.S.	Duplicate US Fixed Income?
Fixed Income	Emerging Markets Fixed Income	Emerging-Markets Bond	JPM EMBI Global TR USD	Emerging Markets Debt (Local)	JPM GBI-EM Global Diversified	Duplicate US Fixed Income?
Commodities		Commodity	DJ UBS Commodity TR USD	Commodities	Bloomberg Commodity	Commodity
REITs		REITs	FTSE NAREIT ALI Equity REITs TR	REITs	Wilshire REIT	Real Estate
Cash and Cash Equivalents		Cash	Citi Treasury Bill 3 Mon USD	Cash	30 Day T-Bills	Cash
Structured Investments	Growth					Medium-Term Market Linked Growth Note
Structured Investments	Income					Medium-Term Callable Market Linked Income Note
Alternatives	Private Equity	Private Equity	Russell 2000 TR	Private Equity	CA U.S. Private Equity	Private Equity Fund
	Private Credit	Private Credit	S&P/LSTA Leveraged Loan	Private Credit	S&P LSTA Leveraged Loan Index	Private Credit Fund
	Private Real Estate/Assets	Private Real Estate	FTSE NAREIT Equity REITs TR	Core Real Estate	NCREIF Property	Private Real Estate Fund
	Hedge Funds	Alternative	HFRX Global Hedge Fund Index	Hedge Funds	HFRI Fund Weighted Composite	Macro Hedge Fund

Architect Asset Class → Optimization Asset Class

Architect Asset Class	Optimization Asset Class	Xignite Global Category	Marquee Asset Class	Fund Master Asset Class/Strategy	ContractParameters	Additional Notes
Equity	U.S. Equities	United States Large Cap Growth Equity, United States Mid Cap Equity, Financials Equity, United States Large Cap Blend Equity, United States				

		Large Cap Value Equity, United States Small Cap Equity, United States Equity, Consumer Goods & Services Sector Equity, Utilities Equity, Health Care Equity, Technology Equity, Communication Services Equity, Industrials Equity, United States Small Mid Cap Equity, Natural Resources Sector Equity , Energy Equity , Precious Metals Equity, Miscellaneous Equity Other, Basic Materials Equity, Consumer Cyclical Equity, Consumer Defensive Equity				
Equity	Emerging Markets Equities	Global Emerging Markets Equity, Emerging Markets Equity, Europe Emerging Markets Equity				Should we create a building block?
Equity	Non-U.S. Developed Equities	Global Large Cap Blend Equity, Global Small Mid Cap Equity, Japan Equity, Europe Large Cap Blend Equity, India Equity, Global Large Cap Value Equity, Global Large Cap Growth Equity, Asia ex- Japan Equity, Greater China Equity, Europe Small Mid Cap Equity, Asia Equity, Latin America Equity, Canada Large Cap Equity, Africa Equity, Taiwan Equity, Australia/New Zealand Equity, Brazil Equity, Malaysia Equity, Mexico Equity, Singapore				Should we create a building block?

		Equity, Korea Equity, Thailand Equity, United Kingdom Large Cap Blend Equity, Global Equity, Global Small Cap Equity, Europe Equity, Canada Small Mid Cap Equity, Israel Equity, United Kingdom Small Mid Cap Equity, Australia Equity,				
Fixed Income	U.S. Fixed Income	United States Fixed Income, United States Municipal Fixed Income, Convertibles, Long Term High Quality Fixed Income, Intermediate Term High Quality Fixed Income, Other Fixed Income, United States Municipal California Tax Preferred, Short Term Low Quality Fixed Income, Long Term Low Quality Fixed Income				
Fixed Income	Non-U.S. Developed Fixed Income	Global Fixed Income, Europe Fixed Income, Asia Pacific Fixed Income, Asia Fixed Income, Canada Fixed Income,				Should we create a building block?
Fixed Income	Emerging Markets Fixed Income	Global Emerging Markets Fixed Income				Should we create a building block?
Mixed Allocation	Cash? Hedge Funds?	Tactical Allocation, United States Target Date Allocation, Moderate Allocation, Cautious Allocation, Aggressive Allocation, Allocation, Target Date Allocation, Canada Target Date Allocation, Global Target Date Allocation				Not sure what an appropriate optimization asset class would be

Commodity	Commodity	Other Commodities, Precious Metals Commodities, Agriculture Commodities, Commodities Energy				
Hedge Fund	Hedge Funds	Hedge Fund (Key: hedge_fund)				
Cash and Cash Equivalents	Cash and Cash Equivalents	United States Money Market, Short Term High Quality Fixed Income, Canada Money Market, Mexico Money Market If the assets exist in Xignite data feed, also need to check Xignite asset type. If Xignite asset type is Money Market , then it should have Cash and Cash Equivalents as asset class, regardless of the Global Category.				
liquidAlternative	Cash? Hedge Funds?					Not sure what an appropriate optimization asset class would be
Real Asset (Other) Real Estate Infrastructure	Private Real Estate/Assets			Private Capital-Real Assets (Key: private_capital_ra)		Current ly there are natural resources and energy alt funds that are categorized as Comm

						odities. Should that change ?
	REITs	Real Estate Equity				Architect categorizes REITs as equities meanwhile we intend to give REITs its own asset class. Should the Architect category be changed?
Private Credit	Private Credit			Private Capital-PC (Key: private_capital_pc)		
Private Equity	Private Equity			Private Capital-PE (Key: private_capital_pe)		
Other	Cash?	Trading Tools , Miscellaneous	Fund (w/o Global Category or Fund Master Category), FX, Econ, Social, xAsset, Loan?			Not sure what an appropriate optimization asset class would be
Structured Investment	Structured Investment Growth		Structured Investment, Cross Asset		ContractTypeName (requires investigation). If	

					not able to categorize by ContractTypeName ame try to infer from displayName. If not possible default to Growth	
Structured Investment	Structured Investment Income		Structured Investment, Cross Asset		ContractTypeName (requires investigation). If not able to categorize by ContractTypeName ame try to infer from displayName. If not possible default to Growth	
Digital Assets			Digital Asset, Cryptocurrency	Digital Assets (key: digital_asset);		

Historical Optimization Asset Class Mapping

Below is a map of optimization asset class → building block (if applicable) → building block underlier id (if applicable) → index to represent the asset class for the purposes of historical optimization

Asset Class	Sub Asset Class	Building Block	Building Block Underlier	ETF (ticker and query id)
Equities	U.S. Equities	US Large Cap	SPY	SPDR S&P 500 ETF Trust (SPY MA4B66MW5E27UAN26KV)
	Non-U.S. Developed Equities			iShares MSCI EAFE ETF (EFA MA4B66MW5E27UAEP4RT) Envestnet uses the Index
	Emerging Markets Equities	Emerging Markets	Vanguard FTSE Emerging Markets ETF	Vanguard FTSE Emerging Markets ETF (VWO MA4B66MW5E27UANT8NZ)

Fixed Income	U.S. Fixed Income	US Treasury Notes	Bloomberg U.S. Treasury: 7-10 Year Total Return Index Value Unhedged	Bloomberg US Treasury 7-10 Year Index (LT09TRUU MA91D2X4PPJTY0F4)
	Non-U.S. Developed Fixed Income			iShares International Treasury Bond ETF (IGOV MA3JGECA05AFYHQR) Envestnet uses Citi WGBI NonUSD USD but we do not have it
	Emerging Markets Fixed Income			iShares MSCI Emerging Markets ETF (EEM MA4B66MW5E27UAEP 4R5) Envestnet uses MSCI EM GR USD Index
Commodity	Commodity			iShares S&P GSCI Commodity-Indexed Trust (GSG MA4B66MW5E27UAHK G47) Envestnet uses DJ UBS Commodity TR USD Index
REITs	REITs	Real Estate	Vanguard Real Estate ETF VNQ	Vanguard Real Estate ETF VNQ (VNQ MA4B66MW5E27UANT 8DX)
Cash	Cash	Treasury Bills	Bloomberg Short-Term Treasury Total Return Index Value Unhedged USD	Bloomberg Short-Term Treasury Total Return Index Value Unhedged USD (LT12TRUU MAB9RQMJYCSXSX2E)
Alternatives	Private Equity	Private Equity	Preqin Private Equity	Preqin Private Equity (5867_-100)
	Private Credit	Private Credit	Preqin Private Credit	Preqin Private Credit (5868_-100)
	Private Real Estate/Assets	Private Real Estate	Preqin Private Real Estate	Preqin Private Real Estate (5869_-100)
	Hedge Funds	Macro Hedge Fund	Preqin Macro Hedge Funds	Preqin Macro Hedge Funds (5865_-100)

