

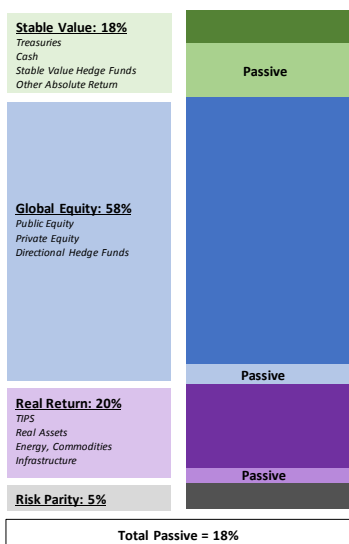


Active Management at Teacher Retirement System of Texas

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 Investment Manager, External Public Markets
 Teacher Retirement System of Texas

Teacher Retirement System of Texas

Asset Allocation

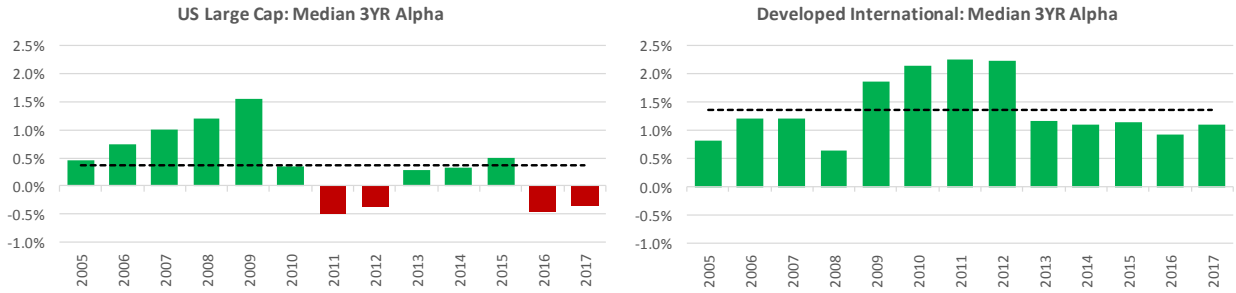


- \$152 Billion
- 1.6 Million Texas Educators
- 160 Investment Staff
- 82% Actively Managed



Belief #1: Active management works, but...

...it works better in some places than others...



Source: eVestment

Belief #1: Active management works, but...

...it works better in some places than others...

TRS Public Equity 5YR Annualized Alpha

5YR as of	Annualized Alpha (bp)			Information Ratio			Monthly Hit Rate		
	USA	EAFE	EM	USA	EAFE	EM	USA	EAFE	EM
Jun-17									
External Managers	-162	220	99	-0.82	0.77	0.6	38%	57%	50%
Internal Fundamental	-133	56	261	-1.26	0.32	1.28	35%	55%	53%
Internal Quantitative	183	169	195	0.84	0.73	0.56	58%	65%	60%



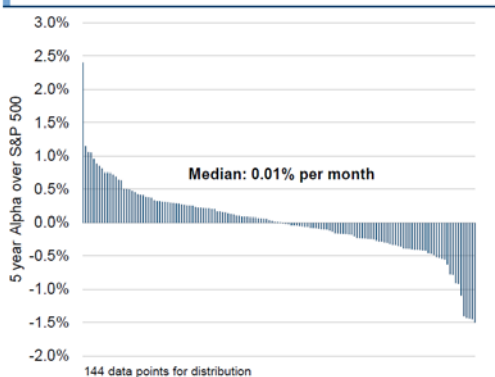
Source: TRS

Belief #1: Active management works, but...

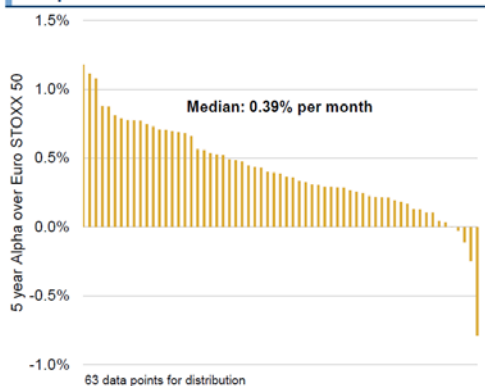
...it works better in some places than others...

Long/Short Equity Median Monthly Alpha: US Managers vs. European Managers

U.S.



Europe

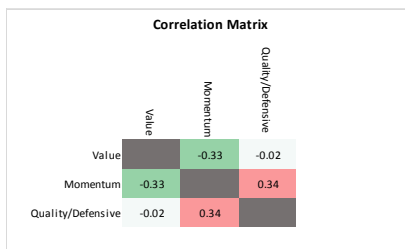
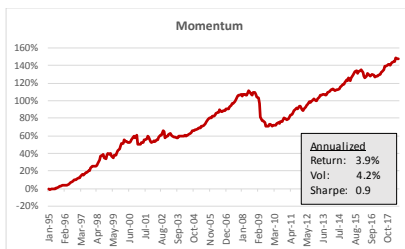
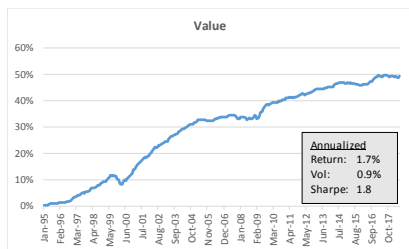


Source: Man Group; FRM

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Belief #2: Some risk factors generate excess returns...

...and our portfolios should tilt toward those risk factors

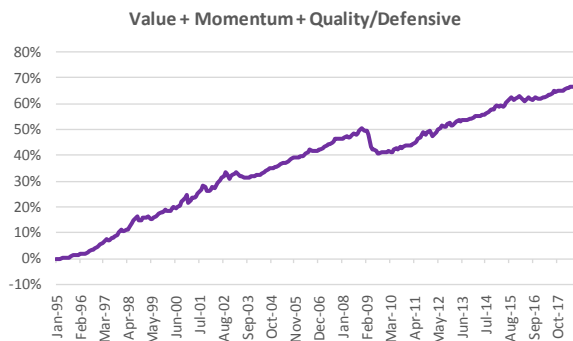


Source: Barra

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Belief #2: Some risk factors generate excess returns...

...and our portfolios should tilt toward those risk factors



	Since 1995	Last 5YR
Annualized Return	2.2%	1.6%
Annualized Vol	1.7%	1.0%
Sharpe Ratio	1.3	1.7



Source: Barra

Belief #2: Some risk factors generate excess returns...

...and our portfolios should tilt toward those risk factors

- Quant strategies are *typically* the most efficient expression of factor tilts
- Internal quant strategies can deliver factor exposure at a low cost (semi-passive, smart beta)

Quant Strategy Factor Exposure

Strategy	Value	Momentum	Quality/Defensive
Internal US	Light Green	Light Green	Light Green
External US	Light Red	Light Green	Light Green
Internal EAFE	Light Green	Light Green	Light Green
External EAFE	Light Green	Light Green	Light Green
Internal EM	Light Green	Light Green	Light Green
External EM	Light Green	Light Green	Light Red
Global	Light Green	Light Green	Light Green
Total Average	Light Green	Light Green	Light Green

Fundamental Strategy Factor Exposure

Strategy	Value	Momentum	Quality/Defensive
External US	Light Red	Light Red	Light Red
Internal EAFE	Light Red	Light Green	Light Red
External EAFE	Light Red	Light Red	Light Red
Internal EM	Light Green	Light Green	Light Green
External EM	Light Red	Light Red	Light Red
Global	Light Red	Light Red	Light Red
Total Average	Light Red	Light Red	Light Red



Source: Barra, TRS

Action #1

Stop Digging (US Active Management)

- Reduced fundamental active management in the US by over \$12B
- Completely eliminated internal fundamental US
- Significantly scaled back external fundamental US
- Re-allocated to successful internal quantitative strategies



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Action #2

Stop Swimming Upstream (Factor Exposure)

- Value, Momentum, and Quality/Defensive should be tailwinds, not headwinds
- Portfolio is required to be positively exposed to these factors
- Primarily use internal quant to achieve this exposure



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Action #3

Don't Hire a Clown to Fix a Leak in the Roof (External Management)

- TRS terminated “active managers” who were only delivering factor exposure
- External Managers must deliver alpha in excess of generic factor exposure
- TRS is focusing external management allocations on specialized or differentiated sources of alpha – stuff TRS cannot do in-house



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Conclusion

- TRS believes in active management
- Some markets are better suited for active management than others
- Internally-managed quant and smart beta strategies are growing at TRS
- External managers must provide differentiated sources of alpha and outperform generic factor exposure



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