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Are There Fences in the Global Factor Zoo?

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Introduction & Research Questions

Local factor models dominate regional and global alternatives in **pricing** contemporaneous stock returns. But does this ranking hold for factor **predictability**?

Factor returns comove across countries: the autocorrelation driving factor momentum has a **common, non-local source**. A local signal is therefore a noisy estimate of the predictable component.

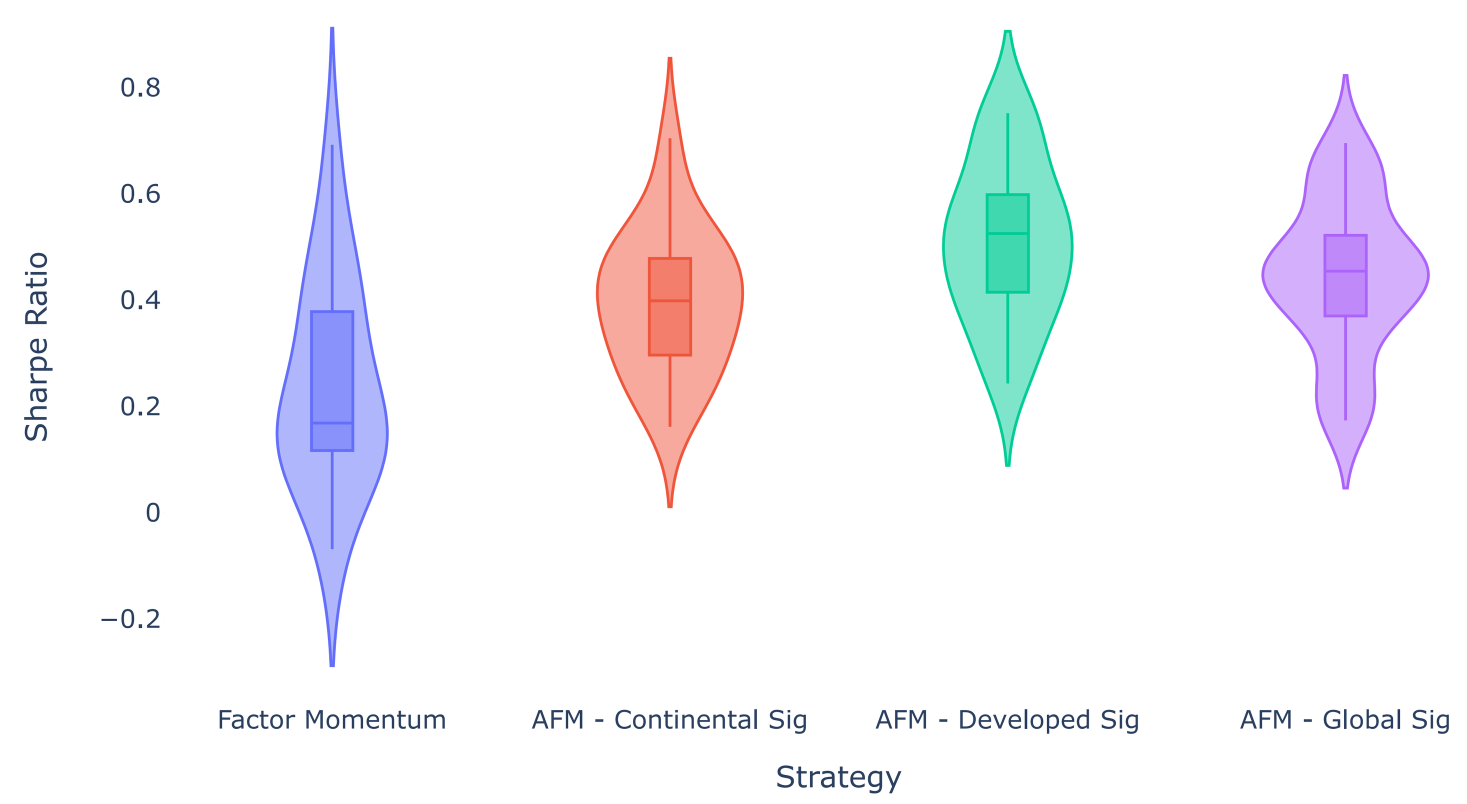
RQ1: *Does cross-country comovement of factor premia give rise to non-local factor momentum that local signals fail to fully capture?*

RQ2: *What determines the optimal geographic scope (aka "the fences") for aggregating factor momentum signals?*

Data & Methodology

- **153 factors** across **47 countries** (23 developed, 24 emerging)
  Source: Jensen, Kelly & Pedersen (2023), jkpfactors.com
- Monthly, USD-denominated, Jan 1998 – Dec 2022 (300 months)
- **Standard FM**: Sort factors on own past 1-month return (median breakpoint)
- **Advanced FM (AFM)**: Sort on *aggregated* past return across continental, developed-market, or global peer groups

Main Result: Developed Markets



Strategy	Return	Std	SR	MDD
Standard FM	3.48	13.65	0.24	−0.40
AFM Continental	3.83	10.25	0.37***	−0.27
AFM Developed	**4.99**	**10.03**	**0.50*****	**−0.24**
AFM Global	3.96	9.59	0.43***	−0.26

Means across 23 developed countries. Return/Std annualized (%).

Risk Adjustment (FF6)

Strategy	α (mo. %)	# sig.	R^2
Standard FM	0.29	8/23	0.09
AFM Continental	0.33	11/23	0.09
AFM Developed	**0.43**	**16/23**	0.08
AFM Global	0.34	14/23	0.08

FF6 alphas (Newey–West SEs). Significance at 5%.

Theoretical Framework

Factor returns decompose into a **common** persistent component shared across countries and a **local** persistent component:

$$F_{i,c,t} = \underbrace{\mu_{i,t}}_{\text{common}} + \underbrace{\delta_{i,c,t}}_{\text{local}} + u_{i,c,t}$$

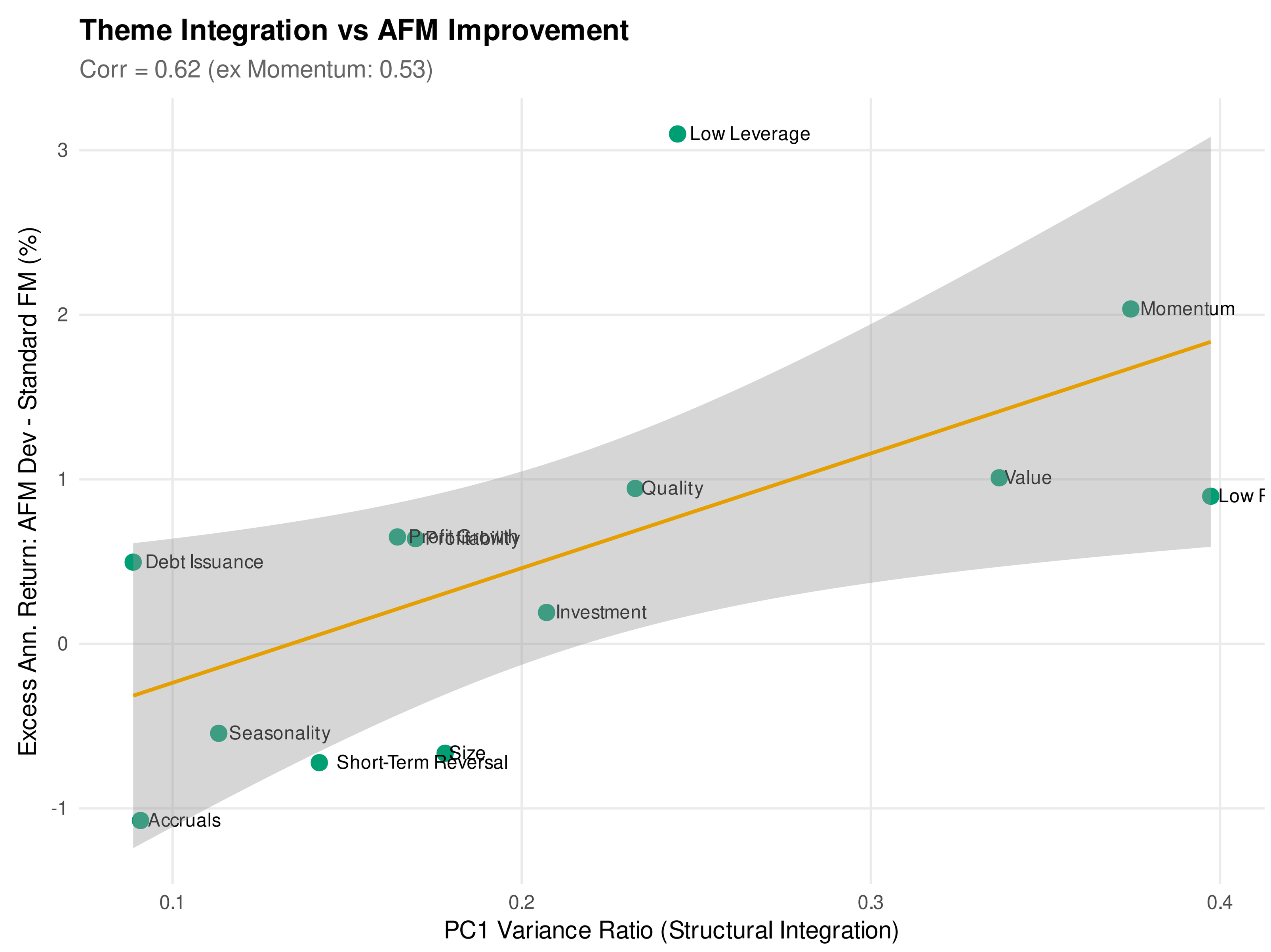
$$\mu_{i,t} = \phi\,\mu_{i,t-1} + \eta_{i,t}, \qquad \delta_{i,c,t} = \psi\,\delta_{i,c,t-1} + \nu_{i,c,t}$$

Aggregating signals across N countries averages out noise but dilutes local information. The aggregated signal dominates iff:

$$\phi^2\,\sigma_\mu^2 \gg \psi^2\,\sigma_\delta^2$$

⇒ Common persistence must dominate local persistence.

Integration Drives the Improvement



We measure cross-country integration via VR_1, the variance share of the first principal component of each theme's factor returns. The panel regression:

$$\Delta SR_{k,c} = \alpha_c + \beta \cdot VR_{1,k} + \varepsilon_{k,c}$$

- **Panel** (country FE): $\hat{\beta} = \mathbf{0.49}$ ($t = 2.67$)
- **Theme-level OLS**: $\hat{\beta} = 0.46$ ($t = 2.13$)
- **Spearman** $\rho = \mathbf{0.70}$ ($p = 0.01$)

Robust Inference & Out-of-Sample

Test	AFM Dev vs. FM	*p*-value
Ledoit–Wolf SR equality	$z = 2.87$	0.004
Block bootstrap ΔSR	CI: [0.10, 0.32]	< 0.001
	In-Sample SR	**OOS SR**
Standard FM	0.30	0.17
AFM Developed	**0.64**	**0.36**

Continental/Global: *not* significant. AFM Dev turnover **46%** $<$ FM 49%; break-even ≈ **22 bps**.

Emerging Markets: Different "Fences"

For the 24 emerging countries, **no single non-local strategy clearly dominates**:

Strategy	Return	Std	SR	MDD
Standard FM	1.67	14.59	0.11	−0.50
AFM Continental	**2.59**	11.37	**0.23*****	−0.32
AFM Emerging	1.95	10.04	0.21*	−0.33
AFM Global	3.37	10.20	0.32***	−0.28

⇒ The "fence" follows **development status**: with low cross-country integration, adding cross-group countries introduces noise that degrades signal quality.

Conclusion

1. **Pricing ≠ prediction**: non-local signals **double** the Sharpe ratio (0.24 → 0.50)
2. **"Fences" follow development status**: different optimal aggregation for developed vs. emerging markets
3. **Integration drives the gain**: $\hat{\beta} = 0.49$ ($t = 2.67$), Spearman $\rho = 0.70$
4. Results survive **robust inference**, **OOS tests**, and **transaction costs**
5. Predictability linked to **slow-moving global financial conditions** (credit spreads, $\beta = 0.14$, $t = 2.89$)

Working Paper