

The Data: Monitor the Economics, Geopolitics and Geoeconomics in Real Time

Question
Do geopolitical and geoeconomic shocks transmit to sovereign credit risk through the *same* channels? No. We document a "scissors pattern" – Direct and GFC channels move in opposite directions

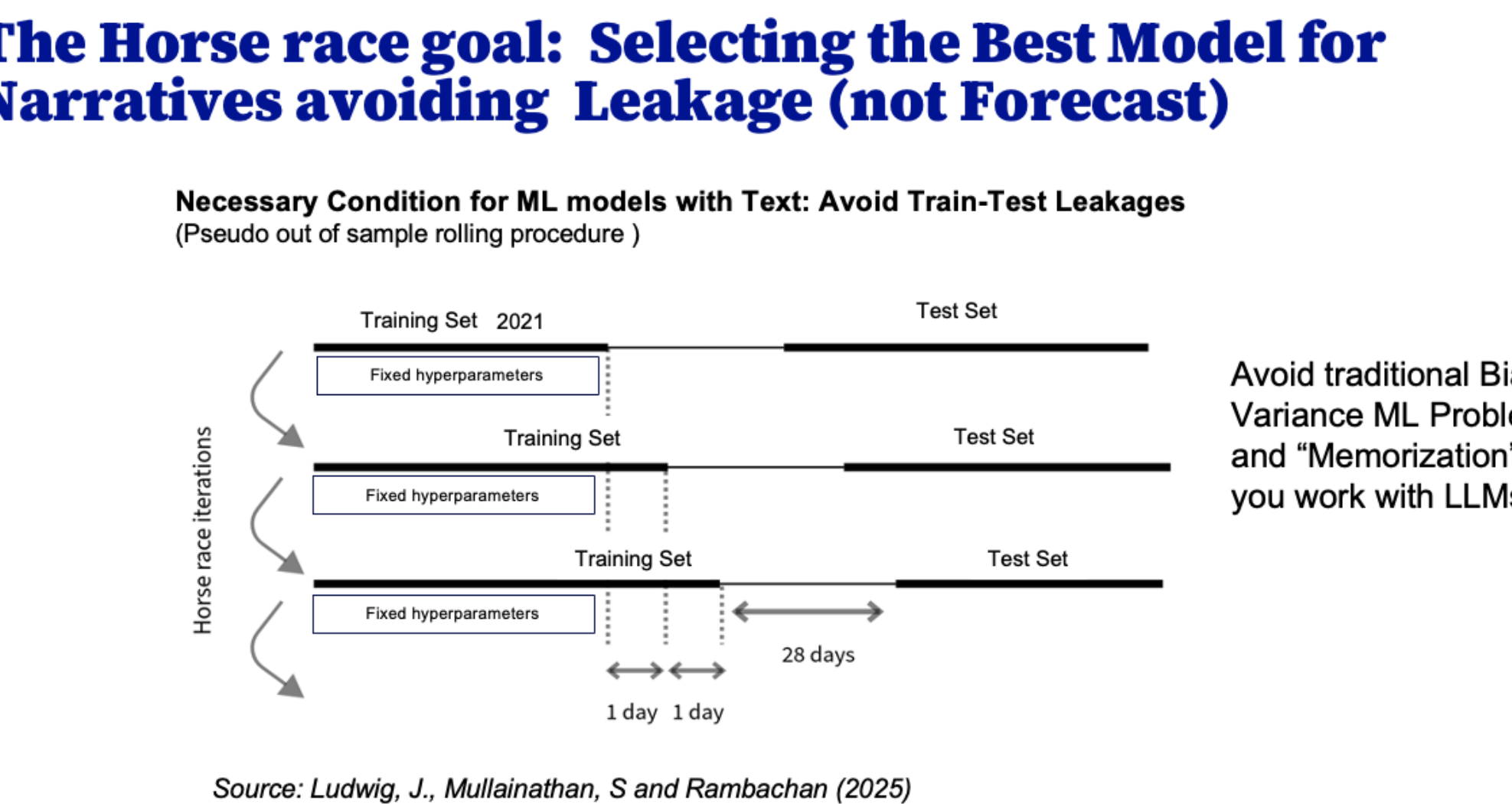
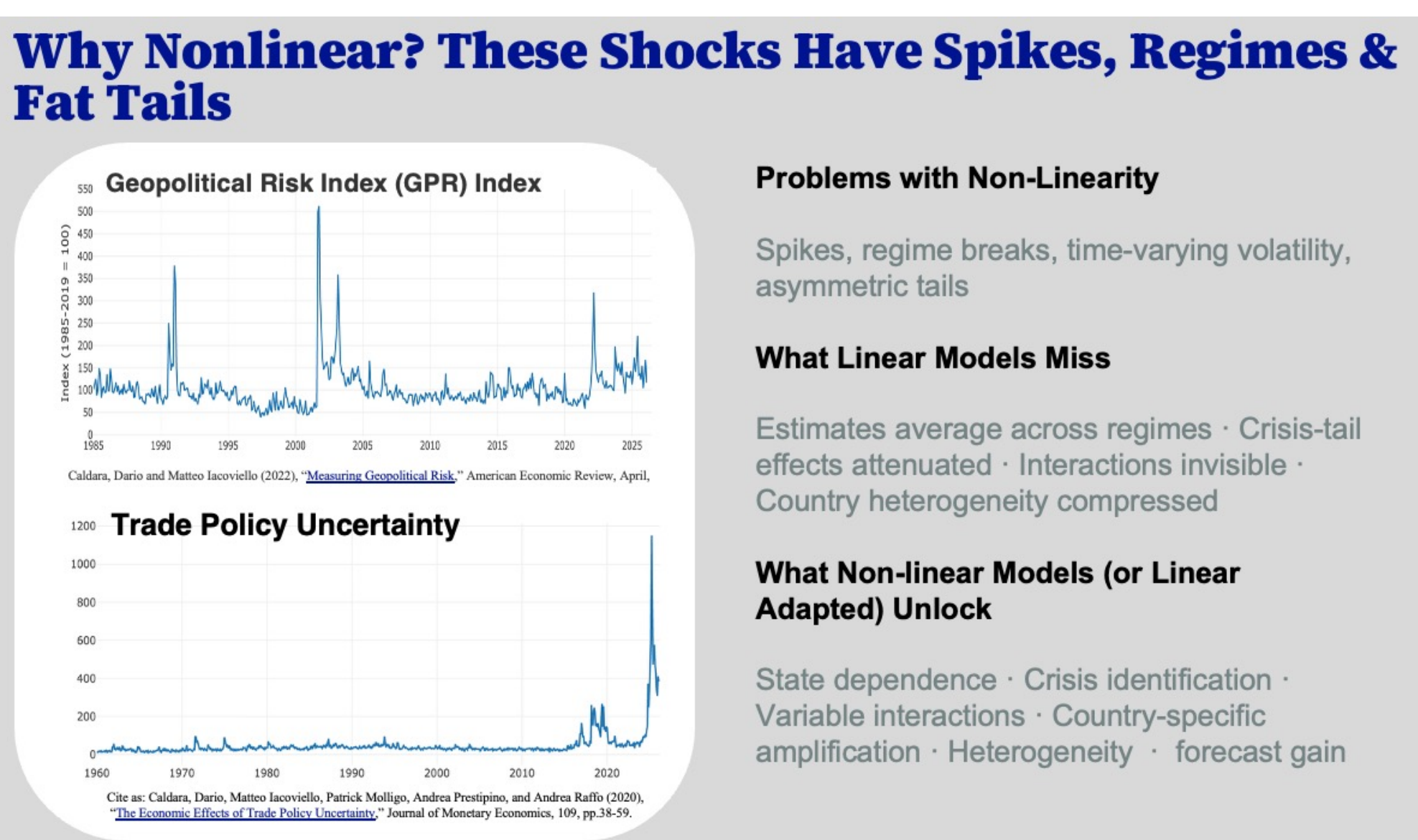
Contributions

- **Data:** Novel daily panel – 42 countries, 2018–2025, news paired with sovereign CDS
- **Methodology** – horse race w/ machine learning models
- **Shapley–Taylor decomposition** of Geopolitics & Geoeconomics Channels to Risk into Direct, Global Financial, Geopolitical Uncertainty and Local effects. Geopolitical episodes activate Direct; geoeconomic episodes bypass it
- **Independent Local Projection validation**

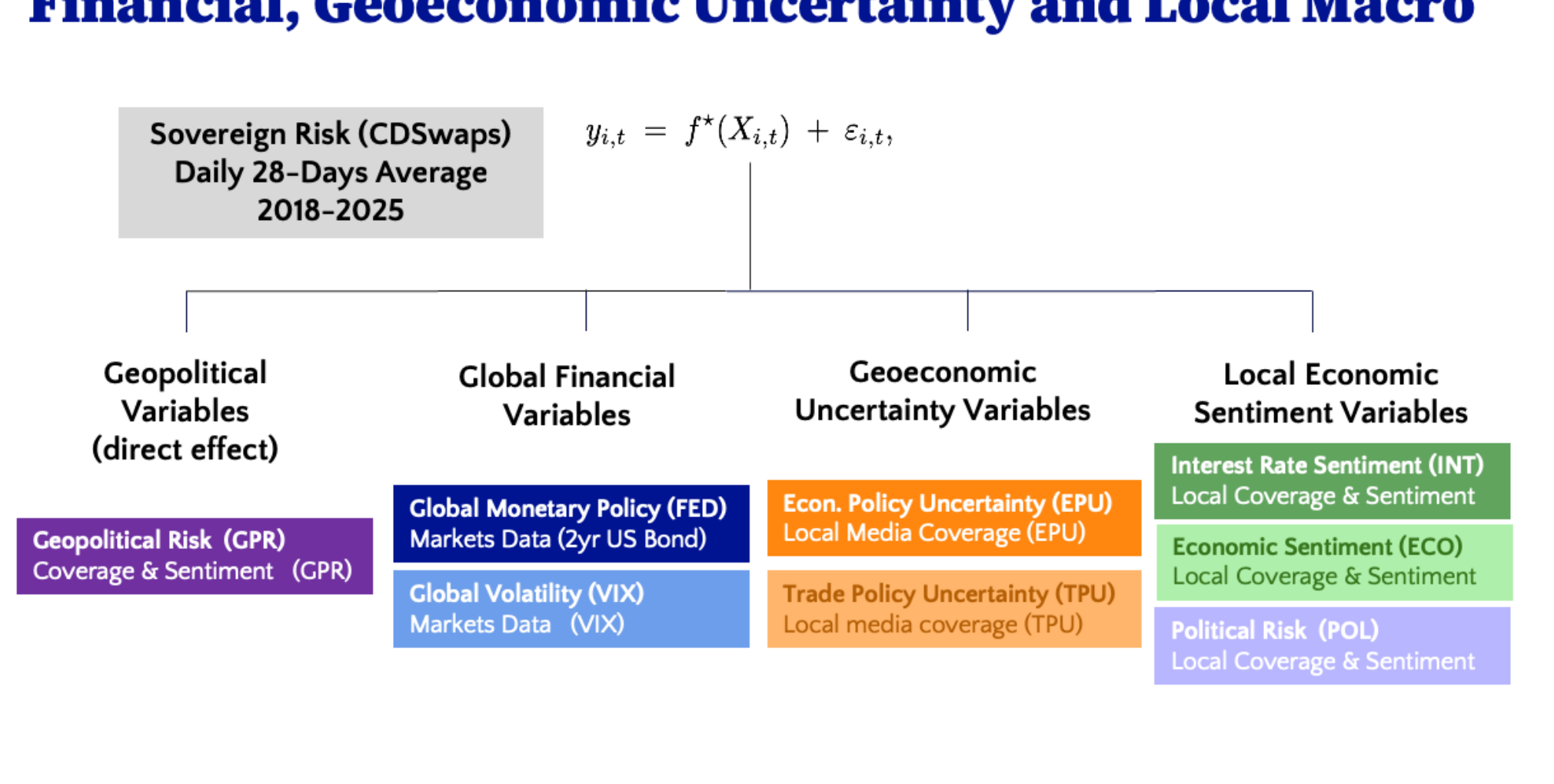
Main takeaways

- **Direct effects** decay with distance from conflict (gravity); uncertainty shocks activate globally
- **Fundamental repricing persists**; financial amplification *mean-reverts*
- **Originator penalty:** geoeconomic-shock originators face widening through Local channel even as monetary easing compresses spreads abroad

Policy implications
GFC-mediated widening → addressable via central-bank liquidity. Direct sovereign repricing → liquidity tools insufficient; requires diplomatic de-escalation or institutional strengthening

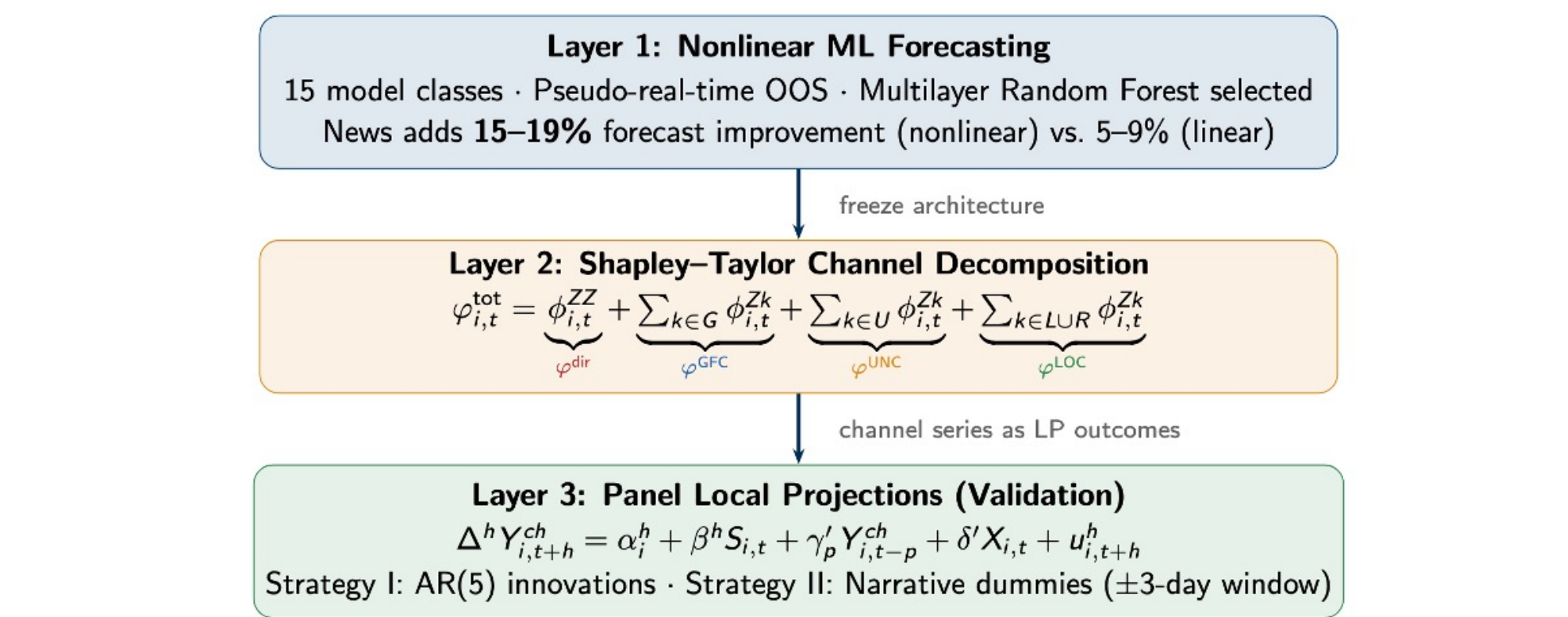


Decomposing Sovereign Risk in Geopolitics, Global Financial, Geoeconomic Uncertainty and Local Macro

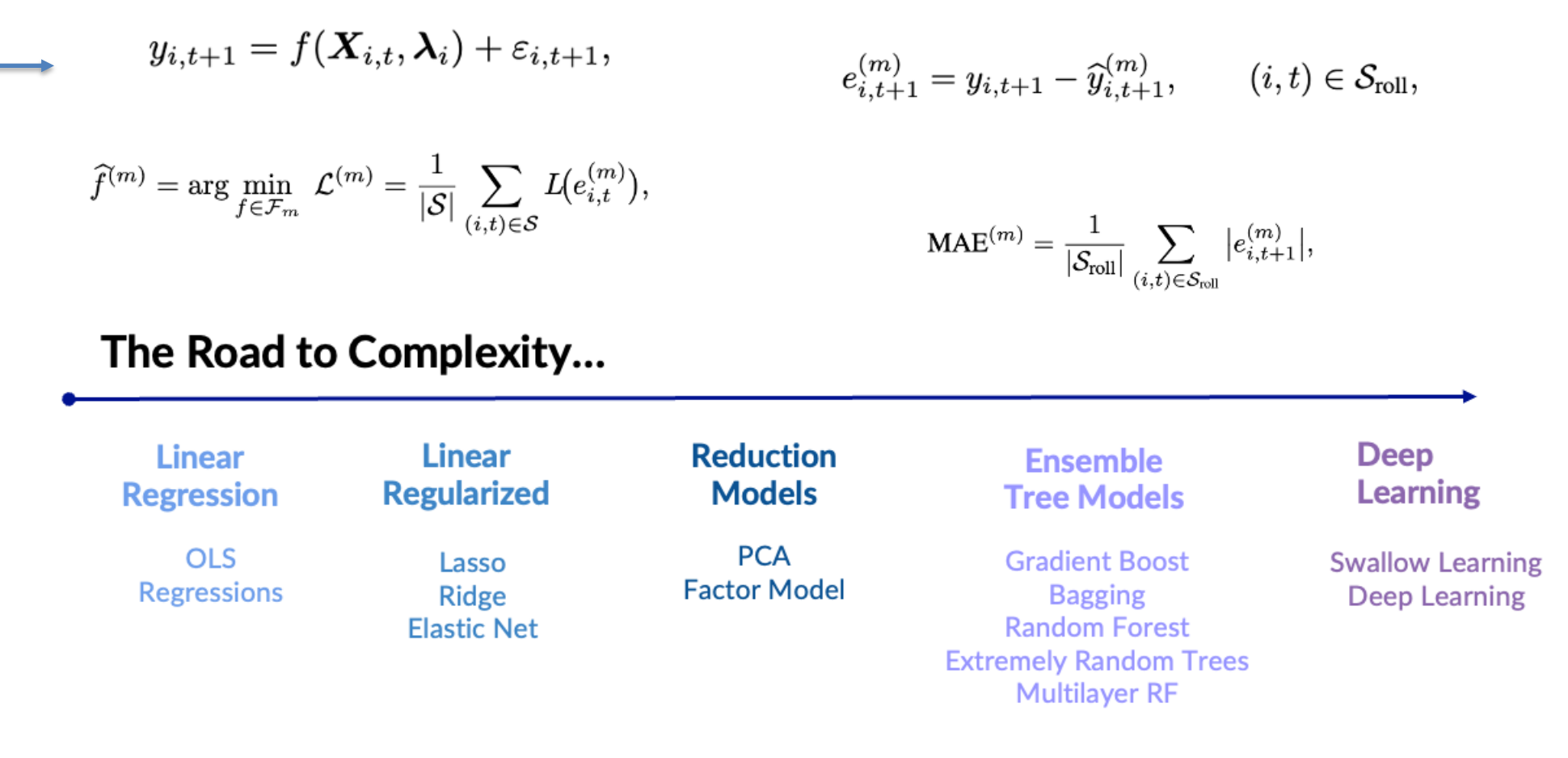


Methodology: The Three Layer Sequence System

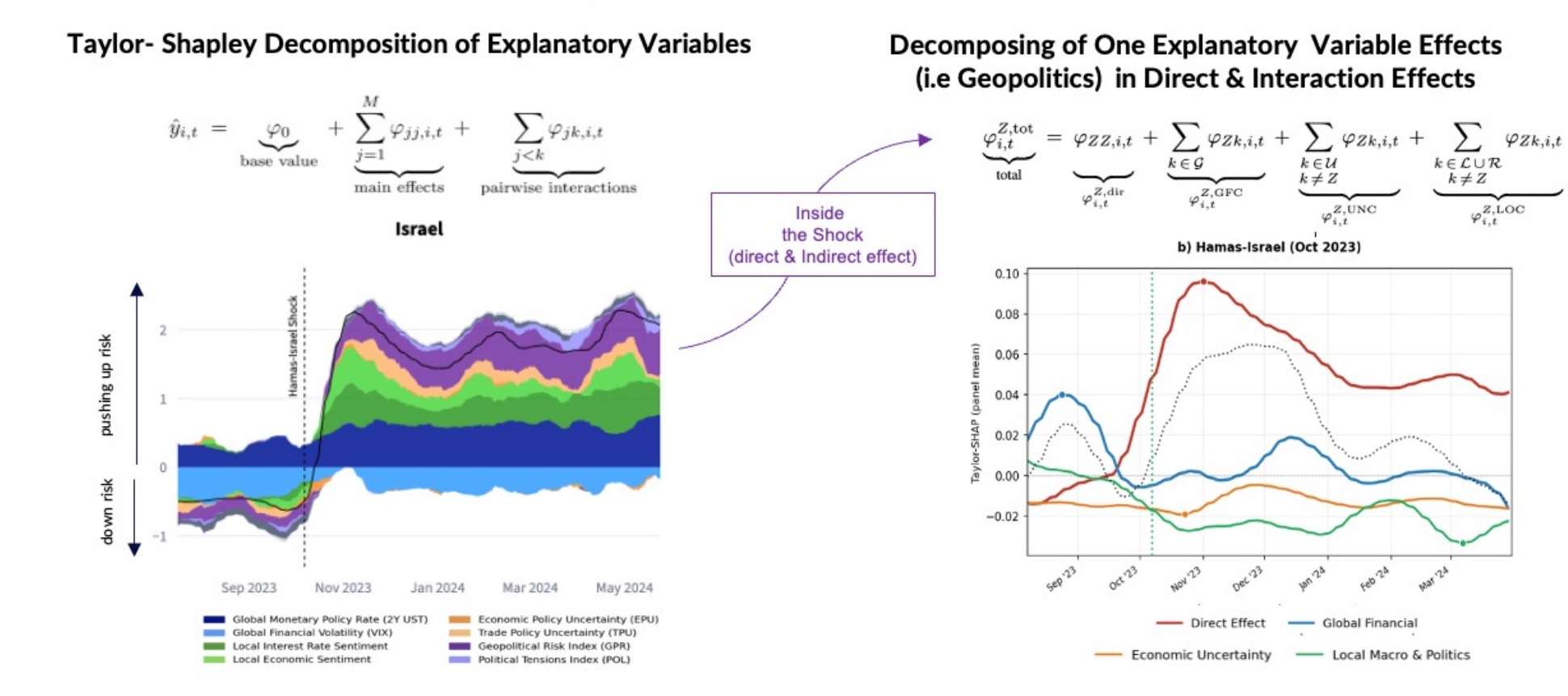
The three layer system: Machine Learning, Shap-Taylor Decomposition and Local Projections



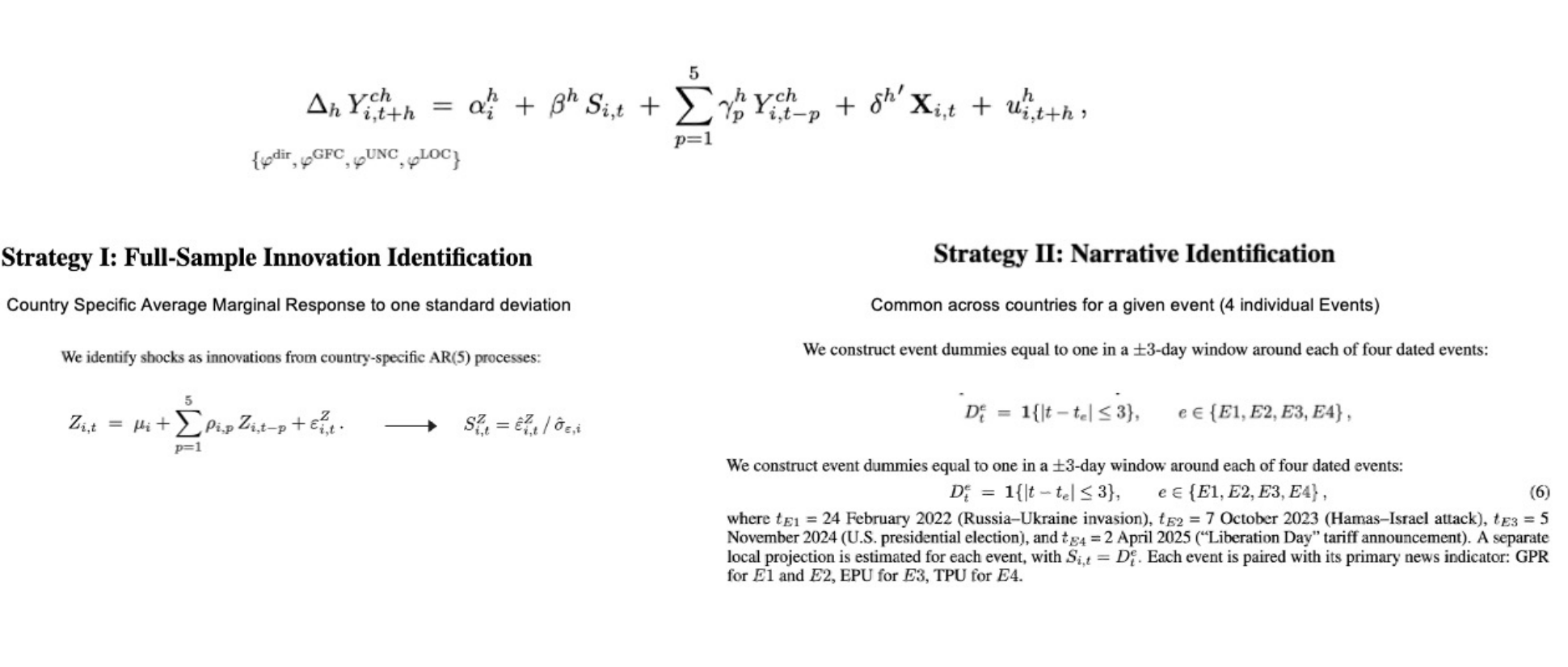
Layer I: Non Linear Machine Learning



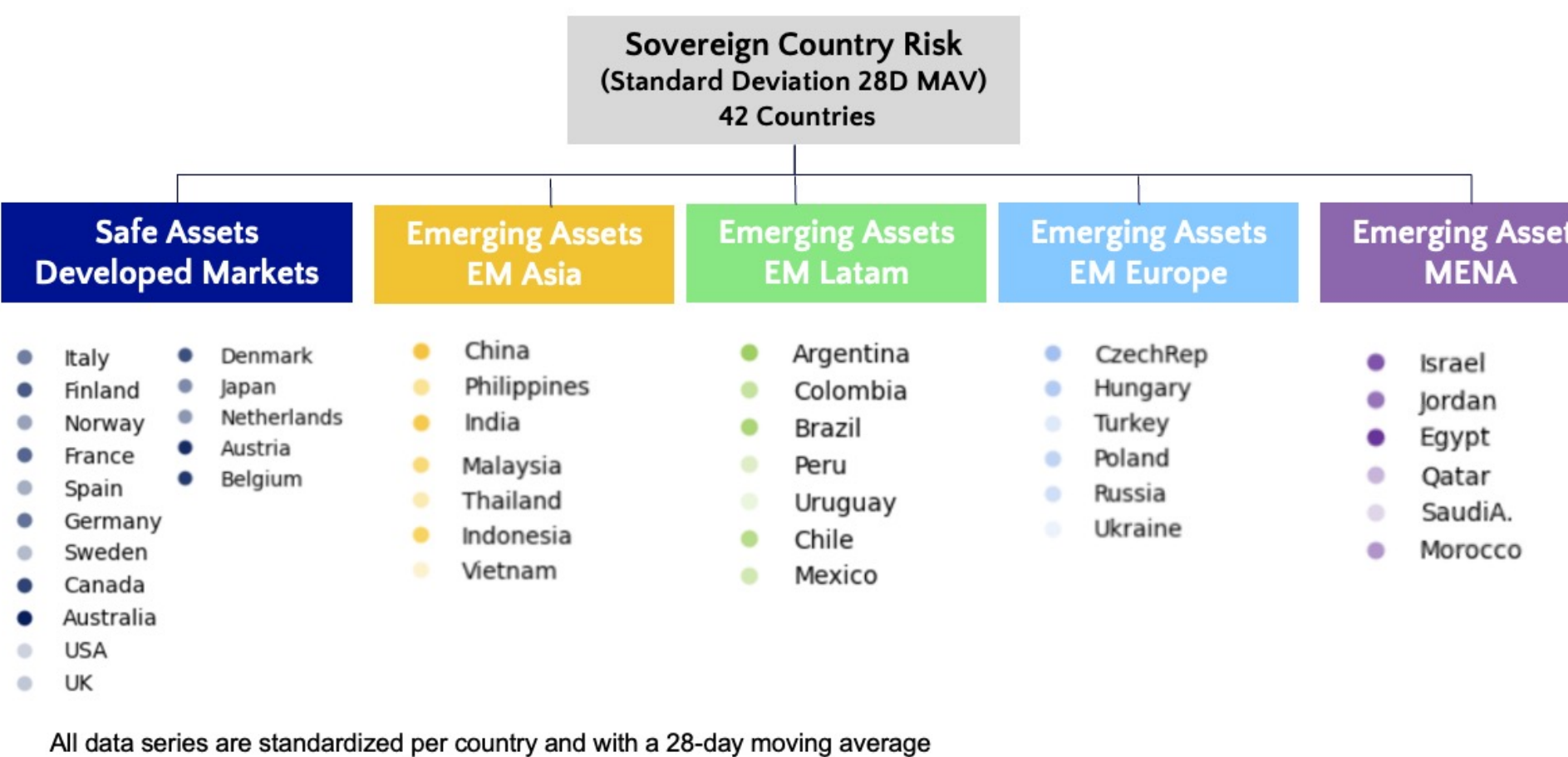
Layer II: Building Narratives and decomposing the Shocks through Shapley-Taylor Values



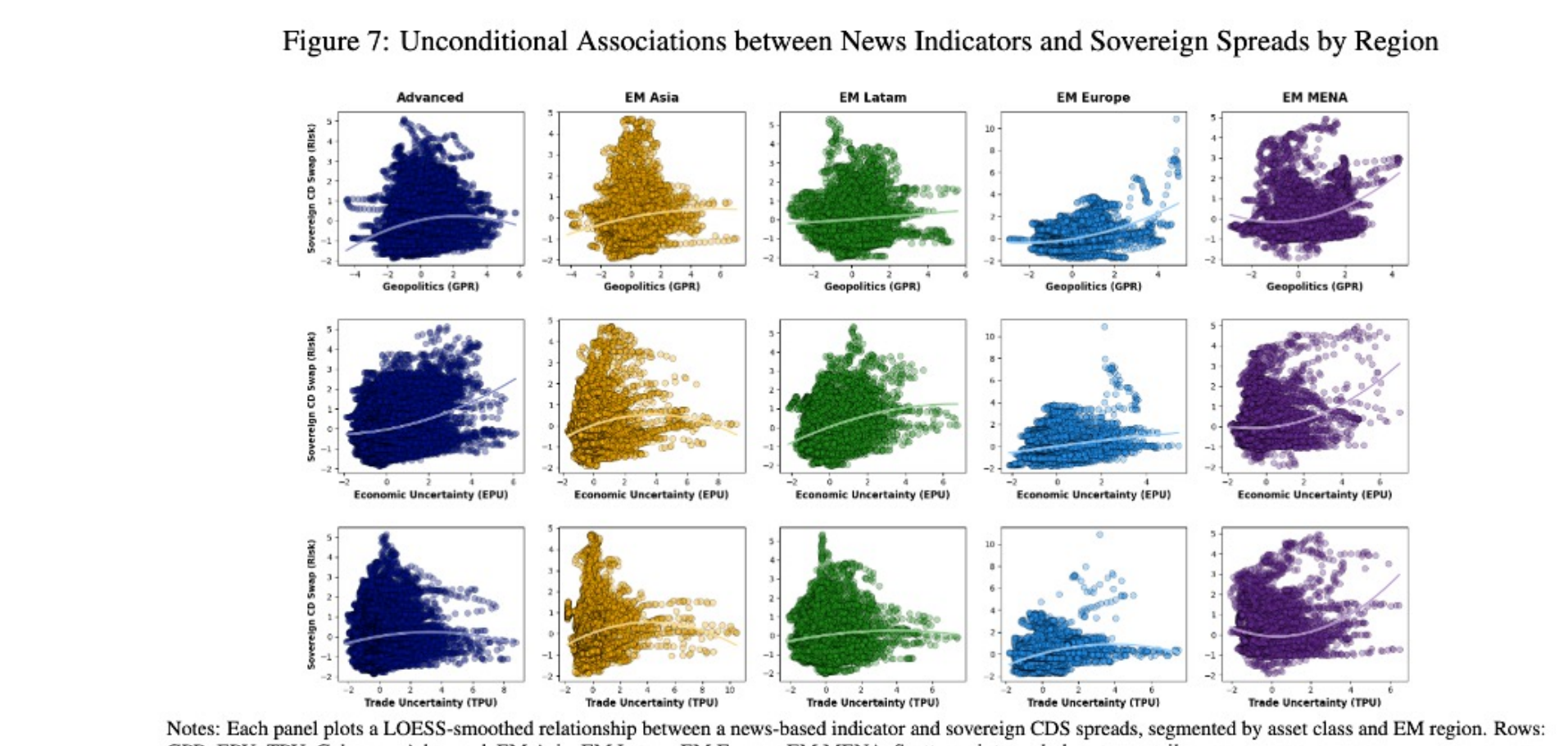
Layer III: Local Projections



High Frequency Sovereign Risk Model



News Indicators and Sovereign Spread by Region



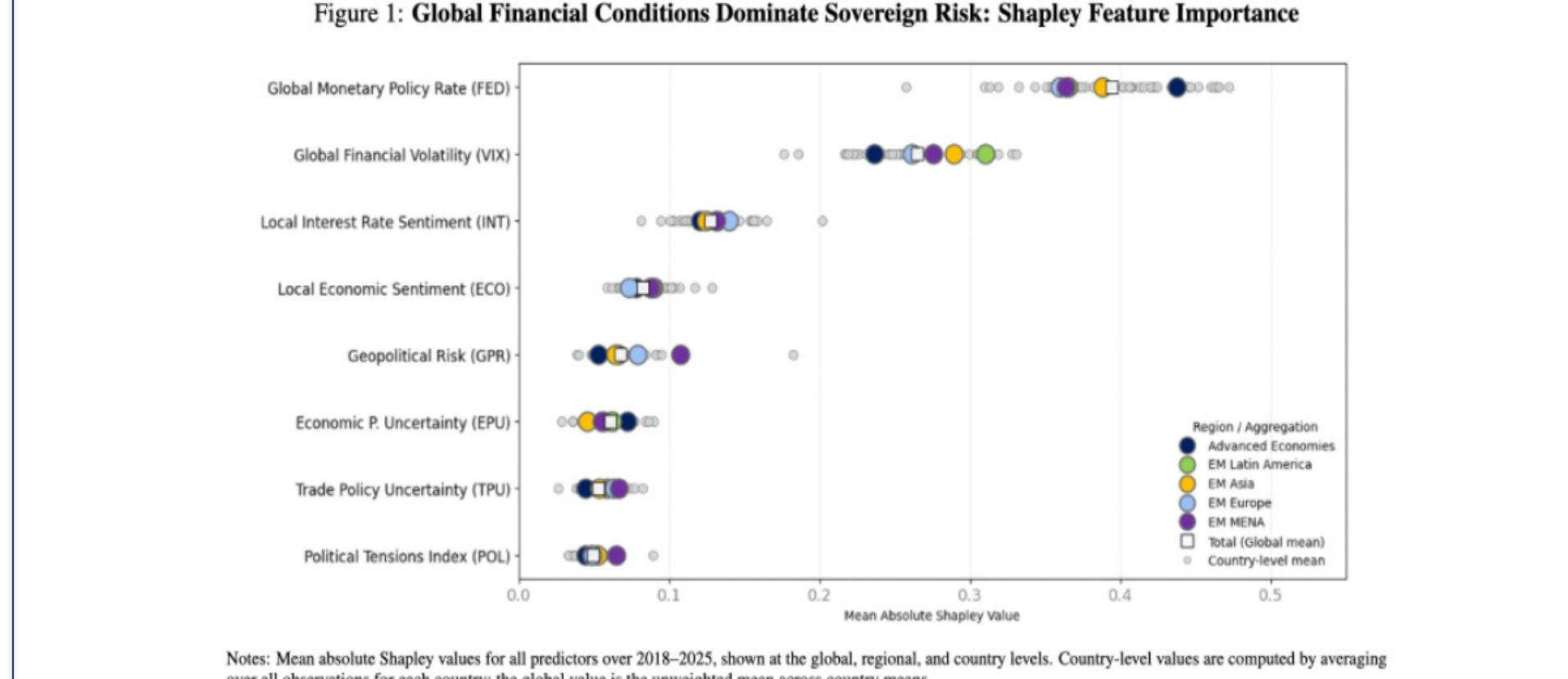
Empirical Results: The Three Layer Sequence System

ML Horse Race: Nonlinear Models superior out-of-sample and Unlock the Predictive Content of News

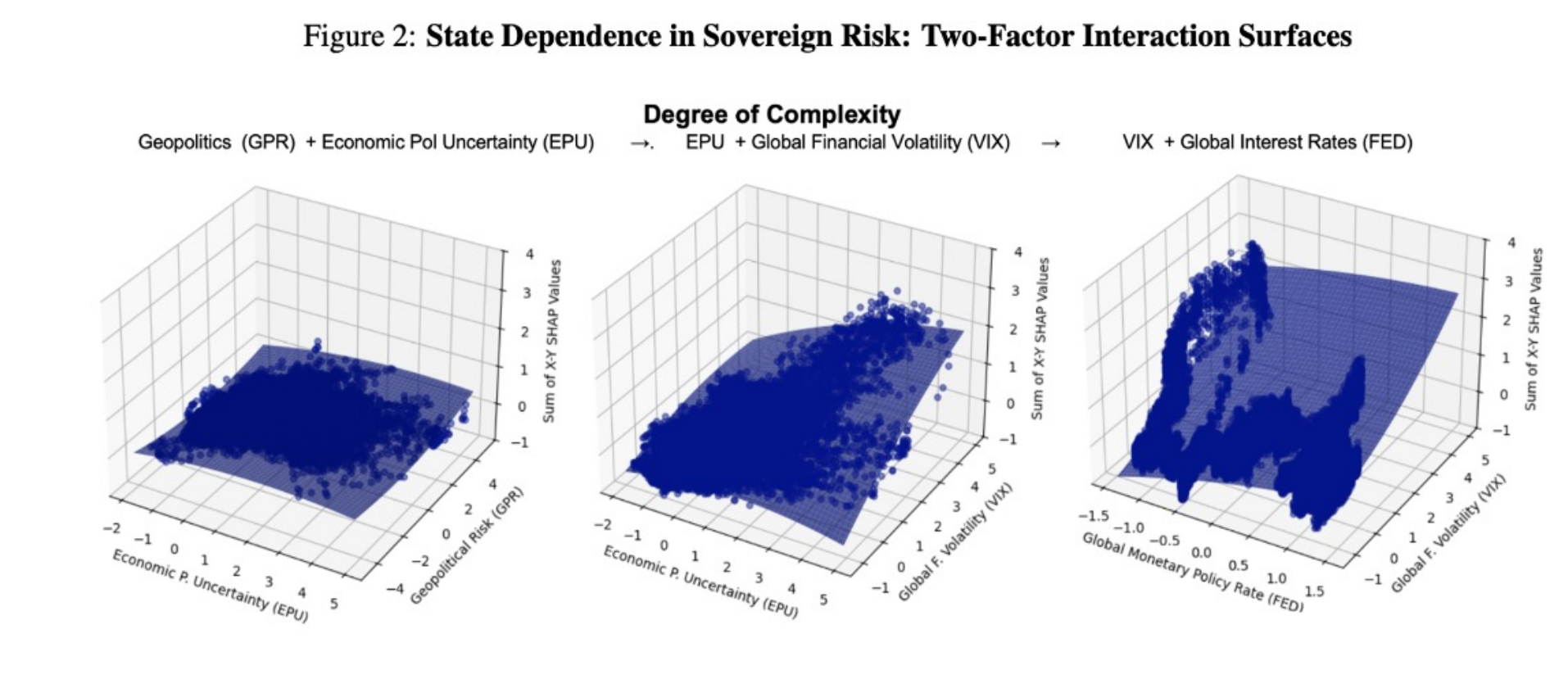
Table 2: News Indicators Improve Nonlinear Forecasts of Sovereign Risk

Machine Learning Model	Benchmark Market + News		News Extended		Difference (News Extended vs Benchmark)	
	RMSE	MAE	RMSE	MAE	Diff % Var	Diff % Var
Linear Regression	1.09	0.92	1.03	0.86	-0.06	-5.7%
Lasso	1.03	0.87	0.95	0.80	-0.08	-8.0%
Ridge	1.09	0.92	1.02	0.85	-0.07	-6.4%
Elastic Net	1.04	0.88	0.95	0.79	-0.09	-8.8%
Quantile Linear Regression	0.93	0.77	0.90	0.74	-0.03	-3.7%
Principal Components (PCR)	1.09	0.92	0.99	0.82	-0.09	-8.6%
Factor Models (FAR)	0.92	0.75	0.88	0.72	-0.04	-4.4%
Gradient Boosting	1.00	0.81	0.85	0.67	-0.14	-14.2%
Bagging	1.03	0.83	0.84	0.67	-0.19	-18.3%
Random Forest	0.99	0.85	0.75	0.62	-0.17	-17.1%
Extremely Randomized Trees	0.98	0.74	0.80	0.60	-0.18	-18.5%
Multilayer Random Forest (1S)	0.97	0.75	0.84	0.62	-0.13	-13.6%
Multilayer Random Forest (2S)	1.01	0.77	0.85	0.65	-0.16	-15.9%
Shallow CNN	1.05	0.84	0.97	0.77	-0.09	-8.3%
Deep CNN	1.04	0.77	0.89	0.66	-0.15	-14.1%

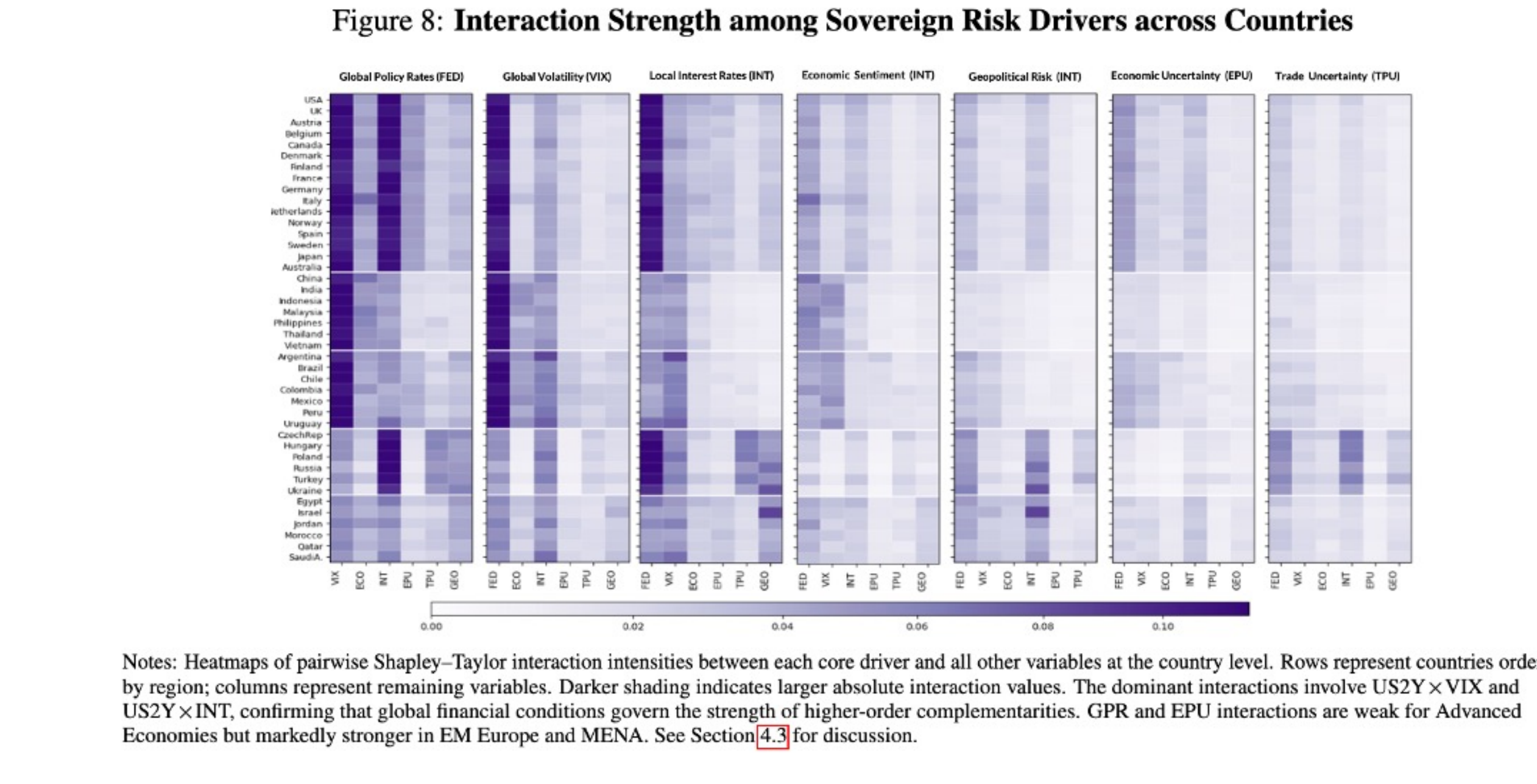
What Drives Sovereign Risk? Global Finance Dominates Geopolitics & Geoeconomic works through Interactions



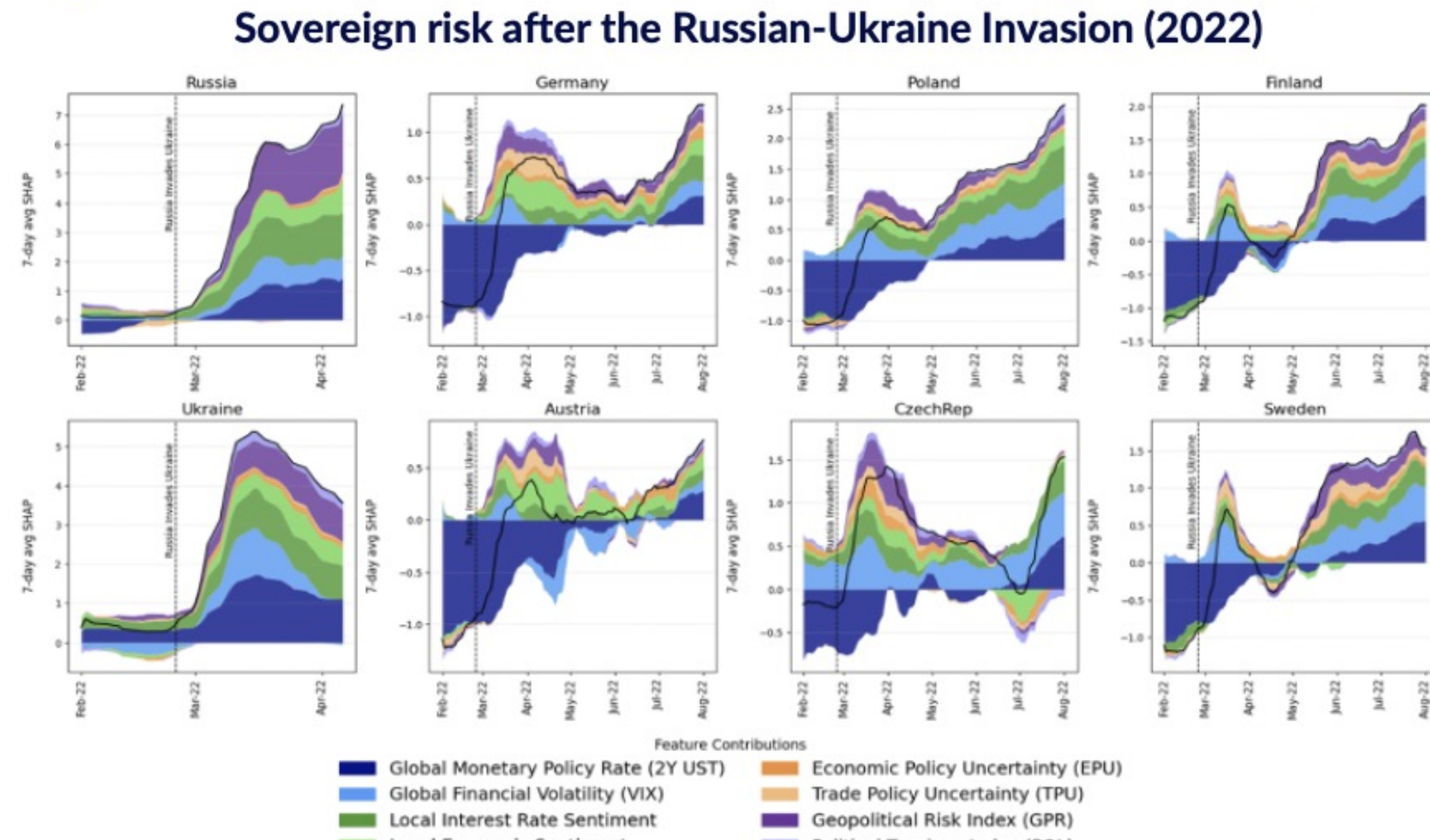
Geopolitics is State Dependent: Small in Isolation, Powerful in Interaction with Global Financial Markets



Interaction Heatmap: Global Financial Conditions Govern the Complementarities

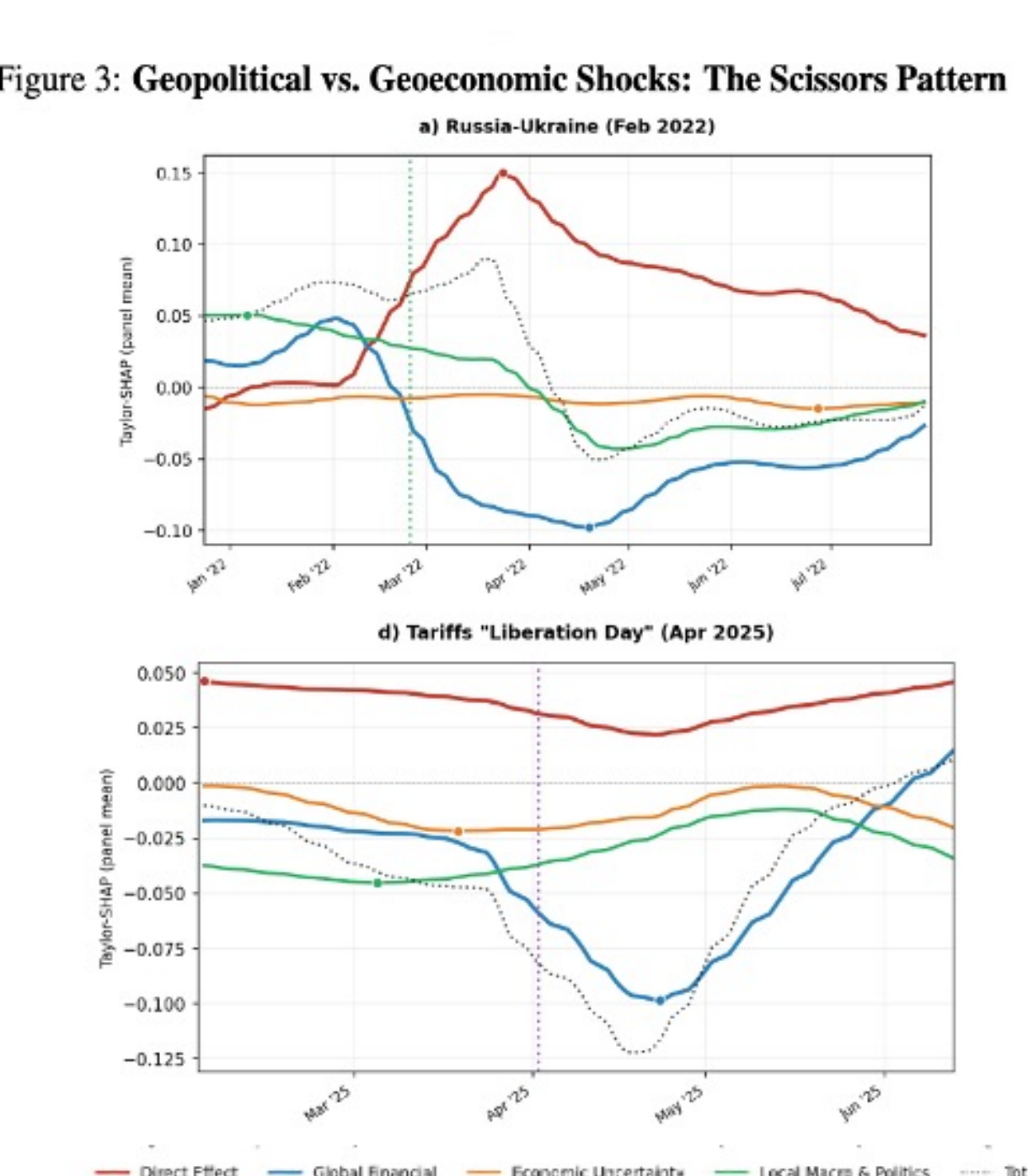


Russia-Ukraine: A Geopolitical Shock morphing in a Systemic Financial Crisis (Sequence)



- 1 Geopolitics Shock Russia invades Ukraine
 - 2 Uncertainty Shock Pol. Uncertainty Increases
 - 3 Local Macro Shock Inflation + Interest rate repr
 - 4 Global Fin. Markets VIX & Yields Amplifies the e
- T Total Significant Risk Increase

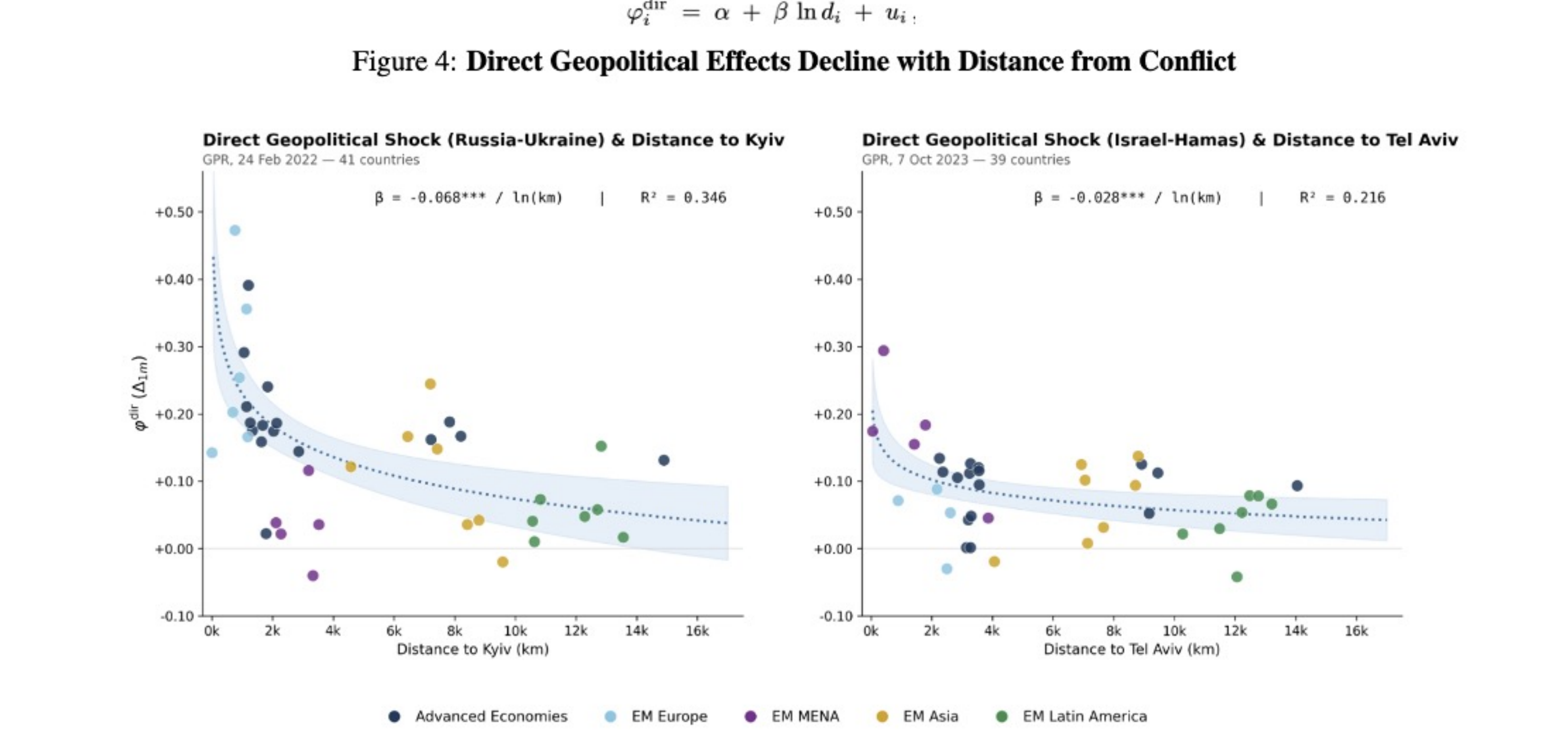
The Scissors: Geopolitics Re-prices Directly – Geoeconomics Transmit via Uncertainty & Local



Taxonomy Scorecard: Geopolitics & Geoeconomic Uncertainty Shocks

Shock	Date	Category	Direct Effect	Global Financial	Uncertainty	Local Macro
Soleimani	Jan 2020	GPR	↑	↓	↔	↔
Russia-Ukraine	Feb 2022	GPR	↑↑	↓	↔	↓
Polisi-Taiwan	Aug 2022	GPR	↑	↓	↔	↓
Hamas-Israel	Oct 2023	GPR	↑	↓	↔	↓
US-China Tariffs	Jul 2018	TPU	↔	↓	↑	↔
UK Mini-Budget	Sep 2022	TPU	↔	↓	↑	↑
U.S. Election	Nov 2024	TPU	↔	↓	↑	↑
Liberation Day	Apr 2023	TPU	↔	↓	↑	↑

Gravity in Sovereign Risk: Direct Effects Decay with Distance from Conflict



Layer III: Local projection of Shocks

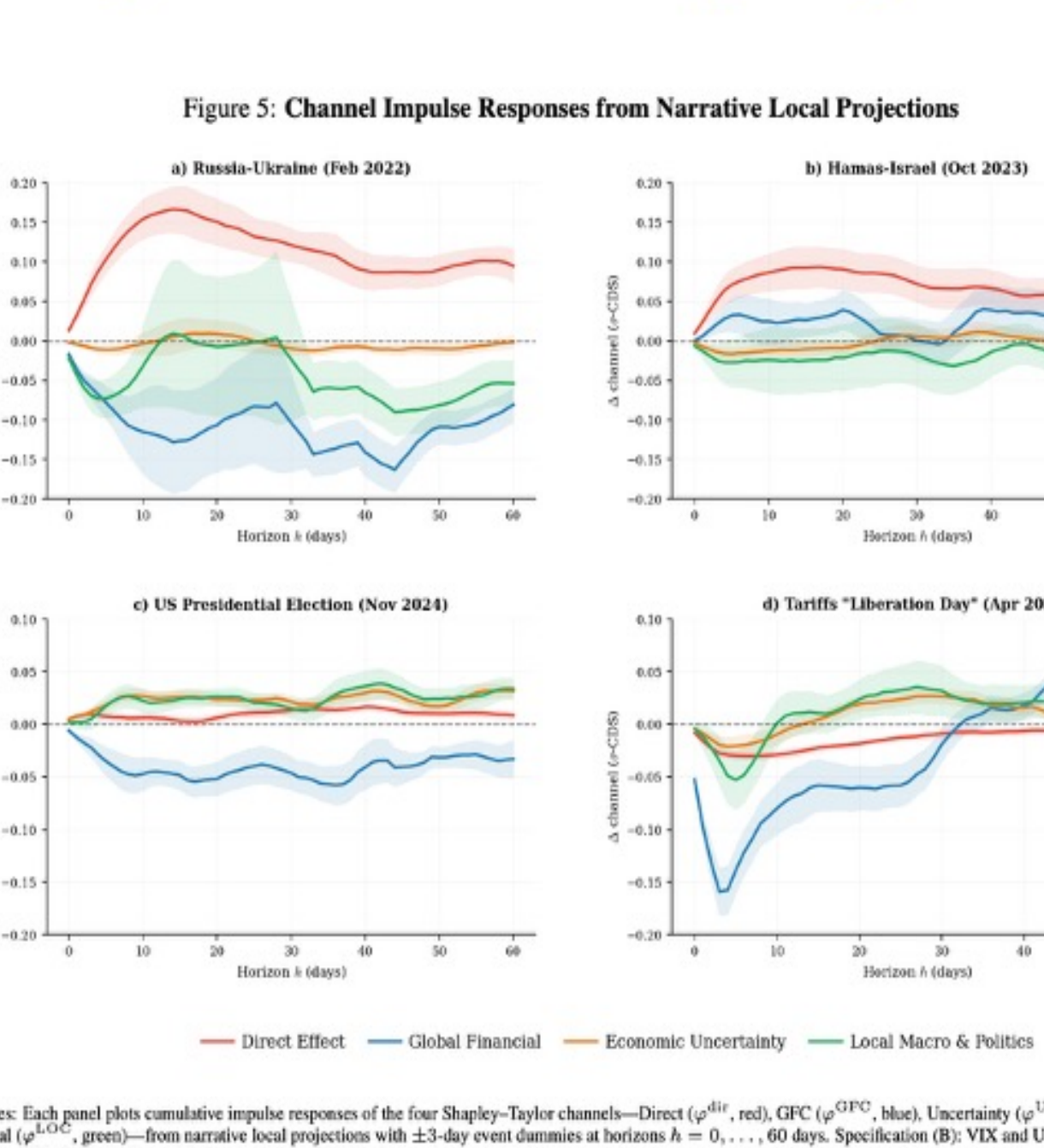


Table 4: Local-Projection Validation of the Channel Taxonomy

Episode	Channel	FULL-SAMPLE INNOVATION LP		NARRATIVE LP	
		Baseline	Global	Baseline	Global
Russia-Ukraine GPR, Feb 2022	$\varphi_{i,t}^{dir}$	+0.05	+0.05	+0.05	+0.05
	$\varphi_{i,t}^{GFC}$	-0.01	-0.01	-0.01	-0.01
	$\varphi_{i,t}^{EPU}$	+0.00	+0.00	+0.00	+0.00
	$\varphi_{i,t}^{LMP}$	-0.04	-0.04	-0.04	-0.04
Hamas-Israel GPR, Oct 2023	$\varphi_{i,t}^{dir}$	+0.05	+0.05	+0.05	+0.05
	$\varphi_{i,t}^{GFC}$	-0.01	-0.01	-0.01	-0.01
	$\varphi_{i,t}^{EPU}$	+0.00	+0.00	+0.00	+0.00
	$\varphi_{i,t}^{LMP}$	-0.04	-0.04	-0.04	-0.04
U.S. Election EPU, Nov 2024	$\varphi_{i,t}^{dir}$	+0.02	+0.02	+0.02	+0.02
	$\varphi_{i,t}^{GFC}$	-0.01	-0.01	-0.01	-0.01
	$\varphi_{i,t}^{EPU}$	+0.01	+0.01	+0.01	+0.01
	$\varphi_{i,t}^{LMP}$	+0.00	+0.00	+0.00	+0.00
"Liberation Day" TPU, Apr 2023	$\varphi_{i,t}^{dir}$	-0.01	-0.01	-0.01	-0.01
	$\varphi_{i,t}^{GFC}$	-0.01	-0.01	-0.01	-0.01
	$\varphi_{i,t}^{EPU}$	+0.01	+0.01	+0.01	+0.01
	$\varphi_{i,t}^{LMP}$	+0.00	+0.00	+0.00	+0.00

Summary and Policy Implications

- **Geopolitical shocks** reprice sovereign risk directly. **Geoeconomic shocks** transmit through financial conditions, uncertainty and local. **"Scissor"**: Same spread widening, opposite channels, opposite policy responses
- **The Geography:** Direct geopolitical effects decay with distance from conflict Proximity determines exposure; the gravity pattern holds across all four geopolitical episodes.
- **The Diagnostic:** Identifying which channels are active in real time tells policymakers whether they can stabilize the shock – or whether it must be resolved at its source.
- **Policy Reaction:** If Global Financial channel dominates → stabilize via liquidity provision and swap lines. – Direct channel dominates → financial tools insufficient – requires diplomatic de-escalation