

Equity Markets Positioning Model

Global Positioning Shifts Toward Europe as US Short Flows Rise

CITI'S TAKE

Global positioning reflected a rotation away from growth exposures. Europe stood out as the primary beneficiary last week, attracting new long inflows while maintaining positioning levels that are constructive but not yet extended. In contrast, the US saw renewed shorts building, particularly across Nasdaq and Russell 2000, where bearish positioning has become increasingly concentrated. Asia remains the weakest region, with KOSPI and Nikkei continuing to see increased short activity against already depressed positioning levels.

US – Nasdaq Flows Deteriorate While Small Cap Shorts Approach Extremes — US positioning deteriorated materially as investors sought to reduce growth exposure through long liquidation and aggressive new short positioning. Nasdaq experienced the largest unwind across indices tracked, but overall positioning remains net long. Russell 2000 positioning remains pinned at the bottom of its historical distribution following another week of uninterrupted short accumulation. Elevated profitability among Russell shorts increases vulnerability to any catalyst capable of initiating forced cover activity.

Europe – Constructive Flows Sustain Positioning Leadership – Europe remained the primary beneficiary of the rotation away from growth, attracting broad-based inflows across major indices. FTSE gains were driven by fresh long accumulation, while DAX improved largely through short covering. EuroStoxx remains the most bullish market in our universe, yet positioning is not extended, suggesting scope for further inflows. European Banks are stabilizing, although the recovery remains driven by reduced bearish exposure rather than new long conviction.

Asia — Bearish Momentum Builds, Squeeze Risks Increase – Asia experienced the weakest positioning dynamics globally, with new short accumulation continuing for both Nikkei and KOSPI. The absence of meaningful long participation remains notable, suggesting bearish sentiment has yet to stabilize. KOSPI now represents the most crowded short within the region with much of the short base sitting profitably in-the-money. While positioning momentum remains decisively negative, increasingly crowded short exposure raises the risk of an outsized short-covering response should sentiment improve.

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See Appendix A-1 for Analyst Certification, Important Disclosures and Research Analyst Affiliations.

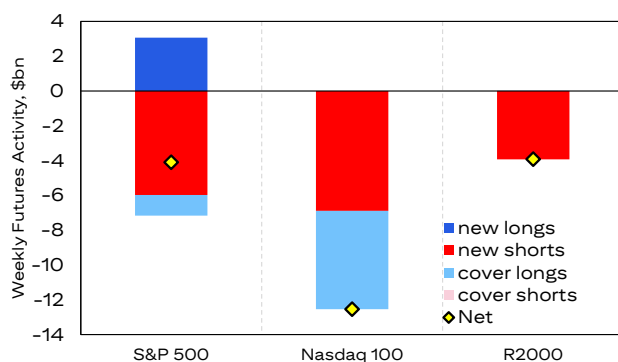
Current Themes

Global equity markets ended the week amid a notable rotation away from growth-oriented exposures, as investors reduced exposure in high-multiple AI-related names and rotated into value, defensive, and energy sectors. While the catalyst was multifaceted, the move coincided with renewed investor preference for value, defensive and energy exposures, while growth-oriented segments experienced notable positioning unwinds.

Positioning flows were notably one-sided, driven primarily by a renewed build-up of short exposure across US indices. The Nasdaq recorded the sharpest deterioration in positioning, while trends in the Russell 2000 remained largely unchanged, with continued net short accumulation leaving bearish positioning extended and profit levels elevated. Although the S&P 500 saw modest new long flows during the week, it was insufficient to offset new short activity and long unwinds.

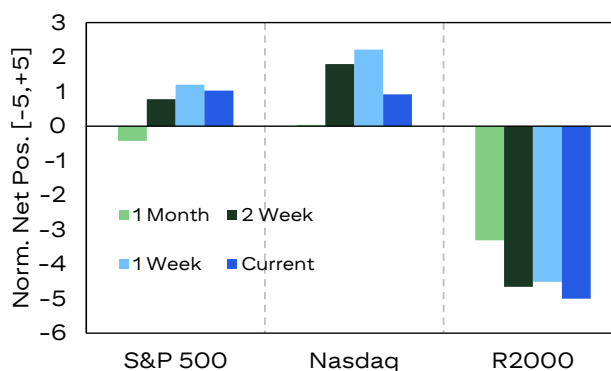
The Nasdaq experienced the largest positioning unwind, registering net outflows of \$12.5bn as investors simultaneously added \$6.9bn of new shorts and exited \$5.6bn of existing longs. As a result, our equity-implied positioning score fell to +0.9 from a recent peak of approximately +2.2 in early October. Meanwhile, Russell 2000 positioning reached the lower bound of our normalized positioning distribution (-5.0) after another week of uninterrupted short building and virtually no offsetting long demand, underscoring the continued vulnerability of small-cap equities in a structurally higher-rate environment.

Figure 1. US shorts rebuild as investors rotate away from growth



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Figure 2. Nasdaq positioning weakens but overshadowed by extensive bearish positioning in small caps



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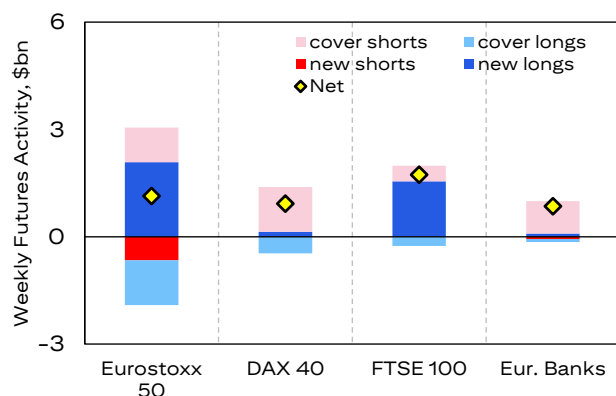
Long positioning across US indices is broadly in loss, with average unrealized losses ranging from -1% for the S&P 500 to -3% for the Russell 2000. However, the more significant positioning risk remains the highly profitable Russell 2000 short base, where profitability levels are near historical extremes. While no immediate catalyst is evident, positioning risk remains elevated given the concentration of profitable short exposure.

Europe

European equities emerged as the primary beneficiary of the week's rotation away from growth, with all indices in the region attracting aggregate net inflows. This marked a notable consensus accumulation of bullish flows into European markets, contrasting sharply with the concurrent outflows and bearish positioning observed across US markets.

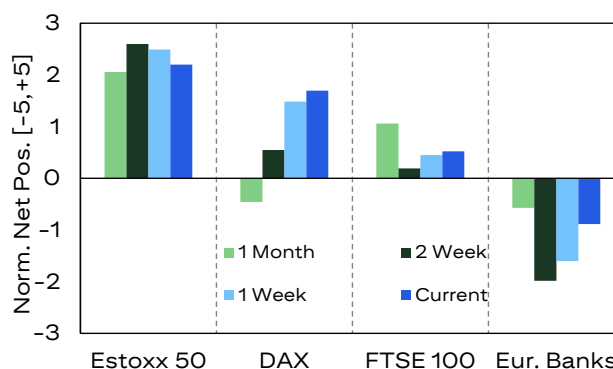
FTSE 100 recorded \$1.7bn of net notional inflows, driven predominantly by new long additions, lifting equity-implied positioning further into bullish territory. While the Euro Stoxx 50 (+2.2) also saw positive flows, the impact on normalized positioning was more modest. In contrast, the DAX experienced a more meaningful improvement in positioning, driven largely by short covering rather than fresh long conviction. European Banks (-0.9) remain in net bearish territory but showed early signs of stabilization, with \$0.9bn of short-covering activity. However, the lack of meaningful new long participation suggests the improvement reflects a reduction in bearish exposure rather than a broader constructive re-rating.

Figure 3. Europe attracts greater bullish flows amid growth rotation



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Figure 4. EuroStoxx leads while banks stabilize through covering



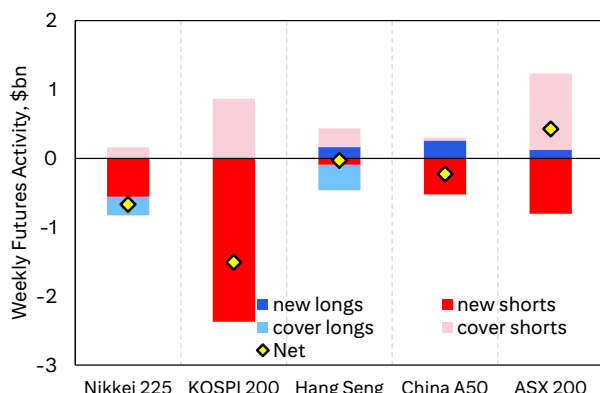
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Despite recent inflows, both EuroStoxx (-1.2%) and DAX (-0.7%) continue to show modest unrealized average positioning losses, reflecting legacy long positions established at higher entry levels. Recent buying has improved positioning sentiment but has not yet been sufficient to offset losses embedded in existing long exposure. With positioning broadly balanced and levels not extended, directional positioning risks appear limited and less clearly defined.

Asia/EM

Flows in Asia continued to reflect acute deterioration over the week, as bearish activity remained dominant across most indices in the region. Both KOSPI (-2.2) and Nikkei (-2.7) saw asymmetric new short risk flows continue to drive a decline in net positioning. Net positioning is moderately bearish across both indices, but more concerning has been the absence of any evidence of an equilibrium being reached or any early indication of a change in positioning sentiment. Across the other indices tracked, there was limited change for Hang Seng (-4), marginally improving but still extended short, while China A50 (-2.4) declined.

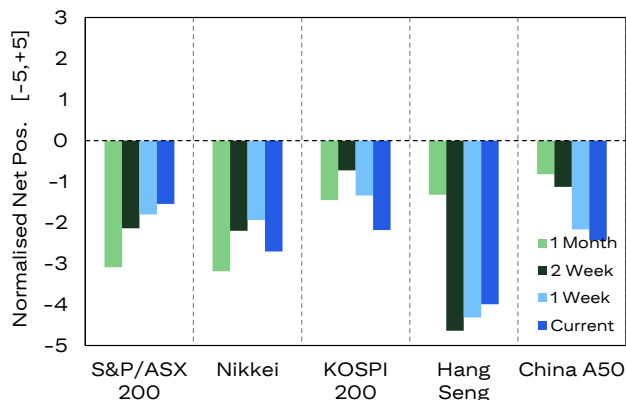
Figure 5. Asia faces relentless bearish flows



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Source: Citi Research

Figure 6. KOSPI and Nikkei lead regional deterioration



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Source: Citi Research

KOSPI presents the most extreme short-side concentration in our APAC universe, with positioning almost exclusively net short and 77% of the short book currently in profit. Current positioning levels (-2.2) reflect a deeply embedded bearish consensus anchored in the global semiconductor capex scrutiny narrative. With positioning heavily skewed toward shorts and limited offsetting long exposure, any positive catalyst could trigger an outsized short-covering response. The 1-week change in change (-0.84) represents the largest single-week deterioration in the APAC complex, confirming that bearish momentum is still accelerating — but also that the short trade is increasingly consensual and therefore increasingly vulnerable to a reversal shock.

Figure 7. Positioning change across global equities

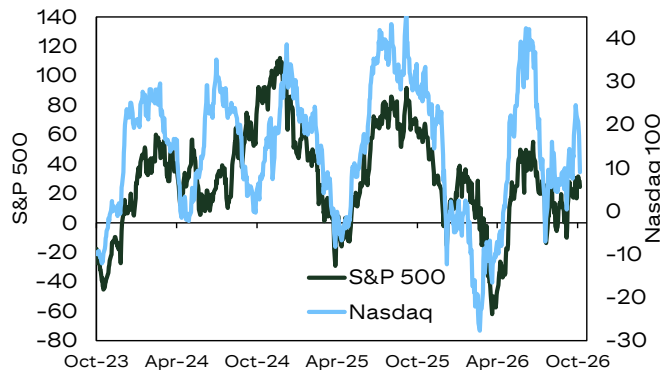
	By 1w change		
	Change	Pos	PnL
DM xUS	1.5	-2.8	1.5
Eur Banks	0.7	-0.9	0.3
Hang Seng	0.3	-4.0	1.0
ASX 200	0.3	-1.5	-0.1
DAX	0.2	1.7	-0.7
FTSE	0.1	0.5	0.1
S&P Mini	-0.2	1.0	-1.0
MSCI EM	-0.2	1.5	-1.3
China A50	-0.3	-2.4	3.1
EuroStoxx	-0.3	2.2	-1.2
R2000	-0.5	-5.0	5.0
Nikkei	-0.8	-2.7	0.4
KOSPI 200	-0.8	-2.2	0.9
Nasdaq	-1.3	0.9	-0.9

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Source: Citi Research

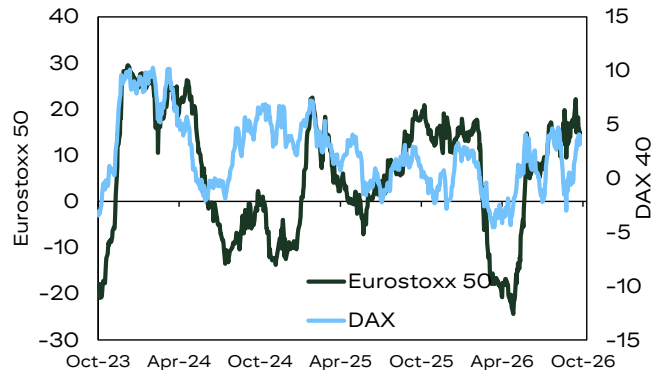
How Has Positioning Changed?

Figure 8. S&P 500 (ES) and Nasdaq 100 (NQ) net positioning



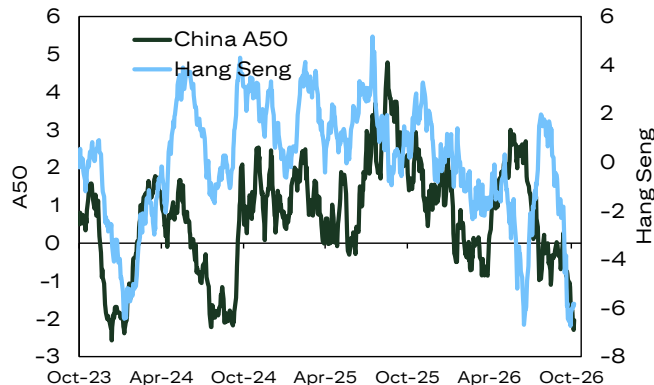
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Figure 9. EuroStoxx 50 (VG) and DAX 40 (GX) net positioning



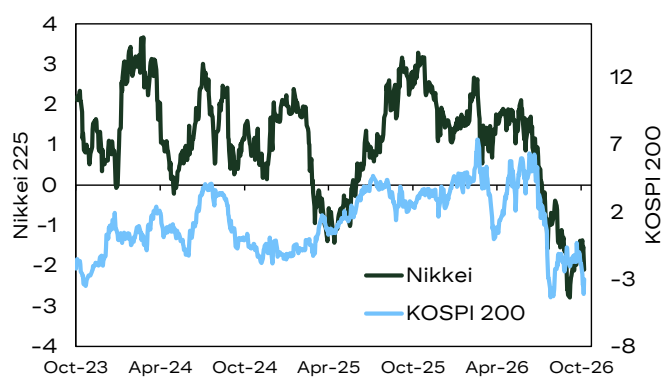
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Figure 10. Hang Seng (HI) and China A50 (XU) net positioning



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Figure 11. Nikkei 225 (NI) and KOSPI 200 (KM) net positioning



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Figure 12. Ranking of Equity Market positioning

16/10/2026	By Position	Pos	PnL
EuroStoxx	2.2	-1.2	
DAX	1.7	-0.7	
MSCI EM	1.5	-1.3	
S&P Mini	1.0	-1.0	
Nasdaq	0.9	-0.9	
FTSE	0.5	0.1	
Eur Banks	-0.9	0.3	
ASX 200	-1.5	-0.1	
KOSPI 200	-2.2	0.9	
China A50	-2.4	3.1	
Nikkei	-2.7	0.4	
DM xUS	-2.8	1.5	
Hang Seng	-4.0	1.0	
R2000	-5.0	5.0	

	By 1w change	Change	Pos	PnL
DM xUS	1.5	-2.8	1.5	
Eur Banks	0.7	-0.9	0.3	
Hang Seng	0.3	-4.0	1.0	
ASX 200	0.3	-1.5	-0.1	
DAX	0.2	1.7	-0.7	
FTSE	0.1	0.5	0.1	
S&P Mini	-0.2	1.0	-1.0	
MSCI EM	-0.2	1.5	-1.3	
China A50	-0.3	-2.4	3.1	
EuroStoxx	-0.3	2.2	-1.2	
R2000	-0.5	-5.0	5.0	
Nikkei	-0.8	-2.7	0.4	
KOSPI 200	-0.8	-2.2	0.9	
Nasdaq	-1.3	0.9	-0.9	

	By PnL	PnL	Pos
R2000	5.0	-5.0	
China A50	3.1	-2.4	
DM xUS	1.5	-2.8	
Hang Seng	1.0	-4.0	
KOSPI 200	0.9	-2.2	
Nikkei	0.4	-2.7	
Eur Banks	0.3	-0.9	
FTSE	0.1	0.5	
ASX 200	-0.1	-1.5	
DAX	-0.7	1.7	
Nasdaq	-0.9	0.9	
S&P Mini	-1.0	1.0	
EuroStoxx	-1.2	2.2	
MSCI EM	-1.3	1.5	

By Position	Percentile
DAX	71%
EuroStoxx	71%
MSCI EM	62%
FTSE	58%
S&P Mini	42%
Nasdaq	38%
ASX 200	21%
DM xUS	10%
China A50	3%
Eur Banks	3%
Hang Seng	3%
KOSPI 200	2%
Nikkei	1%
R2000	0%

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Source: Citi Research, Bloomberg

Figure 13. Summary

		S&P 500	Nasdaq	R2000	Estoxx 50	DAX	FTSE 100	Eur. Banks	S&P/ASX 200	Nikkei	MSCI EAFE	MSCI EM	KOSPI 200	Hang Seng	China A50
(\$bn)	16/10/2026	ES	NQ	RTY	VG	GX	Z	CA	XP	NI	MFS	MES	KM	HI	XU
Equity	Net Notional	24.4	9.0	-14.3	15.0	4.0	1.5	-1.2	-2.9	-2.1	-4.8	3.6	-3.0	-5.8	-2.0
	Percentile	42%	38%	0%	71%	71%	58%	3%	21%	1%	10%	62%	2.3%	3%	3%
	Notional	-38.7	-7.4	-15.2	-5.1	-2.1	-3.2	-1.3	-5.0	-2.3	-8.6	-3.1	-3.9	-6.0	-2.5
	Percentile	78%	58%	100%	50%	60%	77%	94%	79%	93%	94%	57%	99%	96%	100%
Shorts	Avg. Entry	7,715	30,137	2,860	6,185	25,567	10,722	300.6	8,801	66,174	3,166.4	1,700	996.3	24,600	13,922
	% offside	75%	56%	7%	100%	100%	92%	22%	70%	13%	12%	0%	20%	23%	9%
	Notional	63.0	16.4	0.9	20.0	6.1	4.7	0.2	2.1	0.2	3.8	6.7	0.9	0.2	0.4
	Percentile	66%	36%	10%	74%	71%	68%	6%	41%	2%	52%	66%	10%	11%	23%
Longs	Avg. Entry	7,821	30,568	2,848	6,324	25,880	10,745	304.3	8,777	65,349	3,140	1,721	1,096.2	24,339.5	13,597
	% offside	98%	100%	100%	96%	69%	0%	100%	0%	44%	32%	100%	100%	100%	100%
	Ref Price	7,739	29,707	2,755	6,218	25,719	10,889	292.6	8,825	65,366	3,131	1,619	884.6	24,270.3	13,386
	1-day	-4.0	-4.1	-1.1	1.0	-0.7	0.3	-0.1	1.1	-0.3	0.0	0.0	0.8	0.1	0.3
Activity	Type	longs	longs		longs	shorts	longs	shorts	longs	longs	longs	longs			
	1-week	↗	↘	↘	↗	↗	↗	↗	↗	↘	↗	↘	↘	↘	↘
Normalised Scores (-5 / +5)															
Positioning	Equity implied	1.0	0.9	-5.0	2.2	1.7	0.5	-0.9	-1.5	-2.7	-2.8	1.5	-2.2	-4.0	-2.4
	ETF	0.6	3.0		1.0	-0.3	0.5	0.7		0.4		0.9			
	3m Net Pos	0.8	2.0	-5.0	1.6	0.7	0.5	-0.1	-1.5	-1.2	-2.8	1.2	-2.2	-4.0	-2.4
	1w Change	0.1	-0.1	-0.5	-0.2	0.2	0.1	0.3	0.3	-0.1	1.5	-0.1	-0.8	0.3	-0.3
P&L	Equity implied	-1.0	-0.9	5.0	-1.2	-0.7	0.1	0.3	-0.1	0.4	1.5	-1.3	0.9	1.0	3.1
	ETF	-0.8	-0.2		-0.3	0.3	-0.0	-1.2		1.3		-0.4			
	3m Net PnL	-0.9	-0.6	5.0	-0.8	-0.2	0.1	-0.4	-0.1	0.8	1.5	-0.9	0.9	1.0	3.1
	1w Change	-0.4	-2.2	1.4	0.3	0.7	0.4	-0.3	-2.1	0.8	-0.7	-1.0	0.6	-0.8	1.5

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Source: Citi Research, Bloomberg

Figure 14. Average Entry Price Levels and Profit Breakeven Levels

		S&P 500	Nasdaq	R2000	Estoxx 50	DAX	FTSE 100	Eur. Banks	S&P/ASX 200	Nikkei	MSCI EAFE	MSCI EM	KOSPI 200	Hang Seng	China A50
	16/10/2026	ES	NQ	RTY	VG	GX	Z	CA	XP	NI	MFS	MES	KM	HI	XU
Notional	\$bn	24.4	9.0	-14.3	15.0	4.0	1.5	-1.2	-2.9	-2.1	-4.8	3.6	-3.0	-5.8	-2.0
	(-5/+5)	1.0	0.9	-5.0	2.2	1.7	0.5	-0.9	-1.5	-2.7	-2.8	1.5	-2.2	-4.0	-2.4
PnL	\$bn	-0.8	-0.4	0.5	-0.4	-0.0	0.0	0.0	-0.0	0.0	0.1	-0.3	0.3	0.1	0.1
	(-5/+5)	-1.0	-0.9	5.0	-1.2	-0.7	0.1	0.3	-0.1	0.4	1.5	-1.3	0.9	1.0	3.1
Ref Price		7,739	29,707	2,755	6,218	25,719	10,889	292.6	8,825	65,366	3,131	1,619	885	24,270	13,386
Shorts	Size (\$bn)	-38.7	-7.4	-15.2	-5.1	-2.1	-3.2	-1.3	-5.0	-2.3	-8.6	-3.1	-3.9	-6.0	-2.5
	Avg Price	7,715	30,137	2,860	6,185	25,567	10,722	300.6	8,801	66,174	3,166	1,700	996.3	24,600	13,922
	Avg P&L	-0.3%	1.4%	3.8%	-0.5%	-0.6%	-1.5%	2.7%	-0.3%	1.2%	1.1%	5.0%	12.6%	1.4%	4.0%
	Offside (%)	75%	56%	7%	100%	100%	92%	22%	70%	13%	12%	0%	20%	23%	9%
- Offside price															
	100%	7,792	31,096	2,980	6,202	25,647	10,897	316.6	9,003	69,658	3,200	1,728	1,092.5	25,250	14,593
	75%	7,737	30,260	2,902	6,189	25,593	10,706	301.4	8,817	65,848	3,182	1,709	1,066.2	24,930	14,194
	50%	7,689	29,707	2,881	6,177	25,529	10,699	298.7	8,776	65,738	3,173	1,690	975.0	24,670	13,831
	25%	7,674	29,707	2,805	6,150	25,496	10,691	293.1	8,714	65,442	3,134	1,680	886.9	24,102	13,675
	0%	7,663	29,707	2,755	6,146	25,496	10,691	291.5	8,670	64,487	3,101	1,622	878.1	23,934	13,342
Longs	Size (\$bn)	63.0	16.4	0.9	20.0	6.1	4.7	0.2	2.1	0.2	3.8	6.7	0.9	0.2	0.4
	Avg Price	7,821	30,568	2,848	6,324	25,880	10,745	304.3	8,777	65,349	3,140	1,721	1,096.2	24,339	13,597
	Avg P&L	-1.0%	-2.8%	-3.3%	-1.7%	-0.6%	1.3%	-3.9%	0.6%	0.0%	-0.3%	-6.0%	-19.3%	-0.3%	-1.6%
	Offside (%)	98%	100%	100%	96%	69%	0%	100%	0%	44%	32%	100%	100%	100%	100%
- Offside price															
	100%	7,729	29,847	2,763	6,212	25,405	10,520	292.6	8,712	64,113	3,107	1,699	1,087.7	--	13,386
	75%	7,800	30,129	2,820	6,253	25,666	10,681	292.6	8,716	64,114	3,108	1,699	1,087.8	--	13,386
	50%	7,807	30,407	2,854	6,340	25,739	10,730	292.6	8,804	64,635	3,108	1,718	1,090.2	--	13,386
	25%	7,848	30,804	2,860	6,353	25,981	10,783	304.1	8,810	66,338	3,187	1,739	1,092.7	--	13,867
	0%	7,874	31,080	2,862	6,398	26,498	10,843	319.1	8,820	66,567	3,207	1,740	1,122.7	24,339	13,927

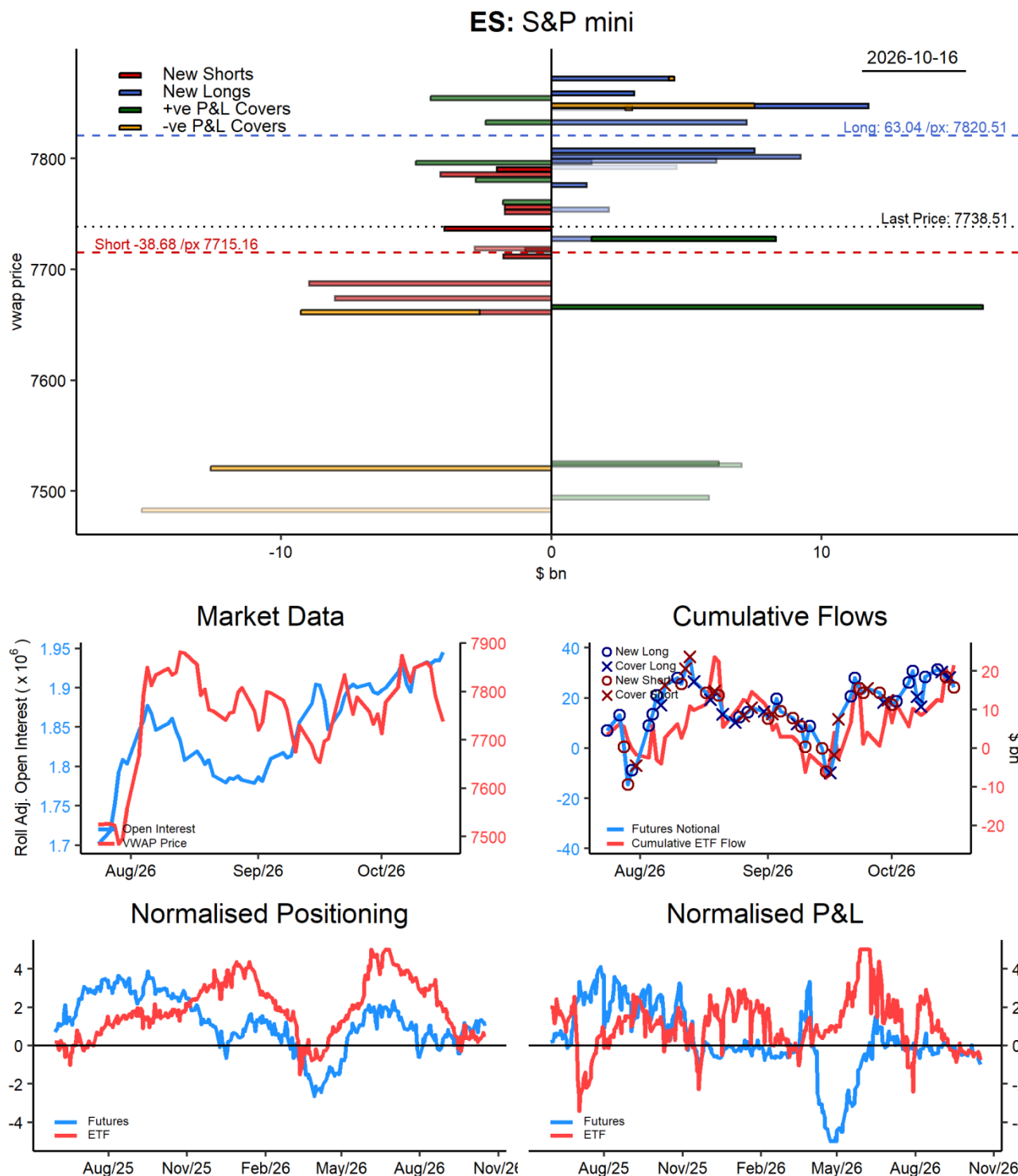
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Source: Citi Research, Bloomberg

Equity Markets Positioning Charts

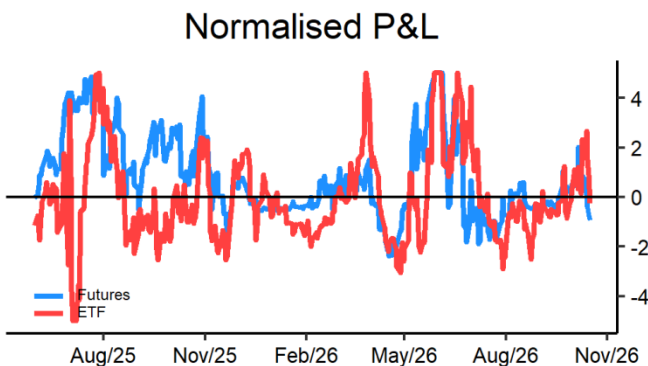
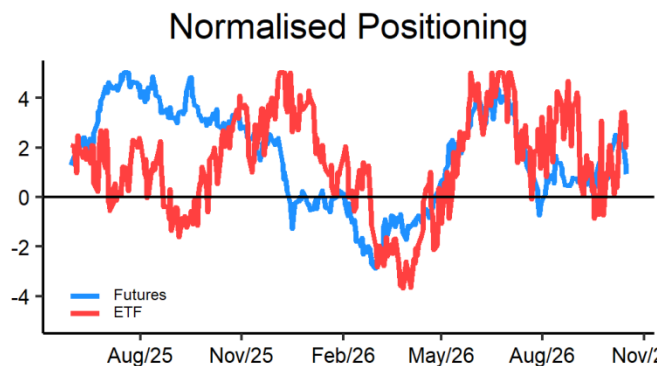
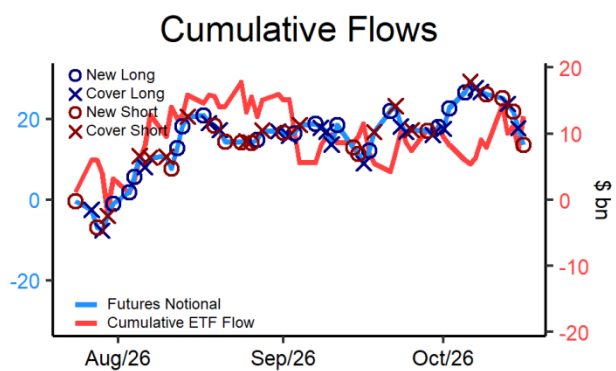
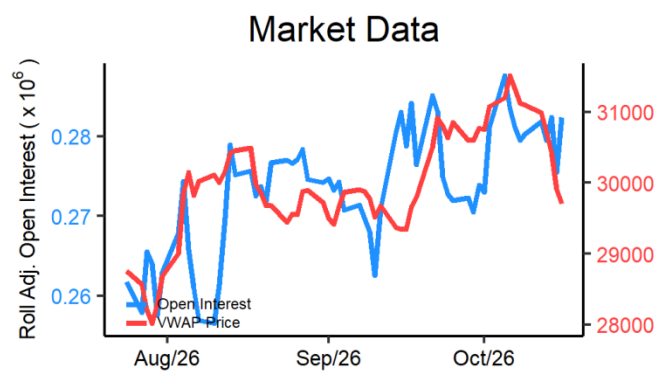
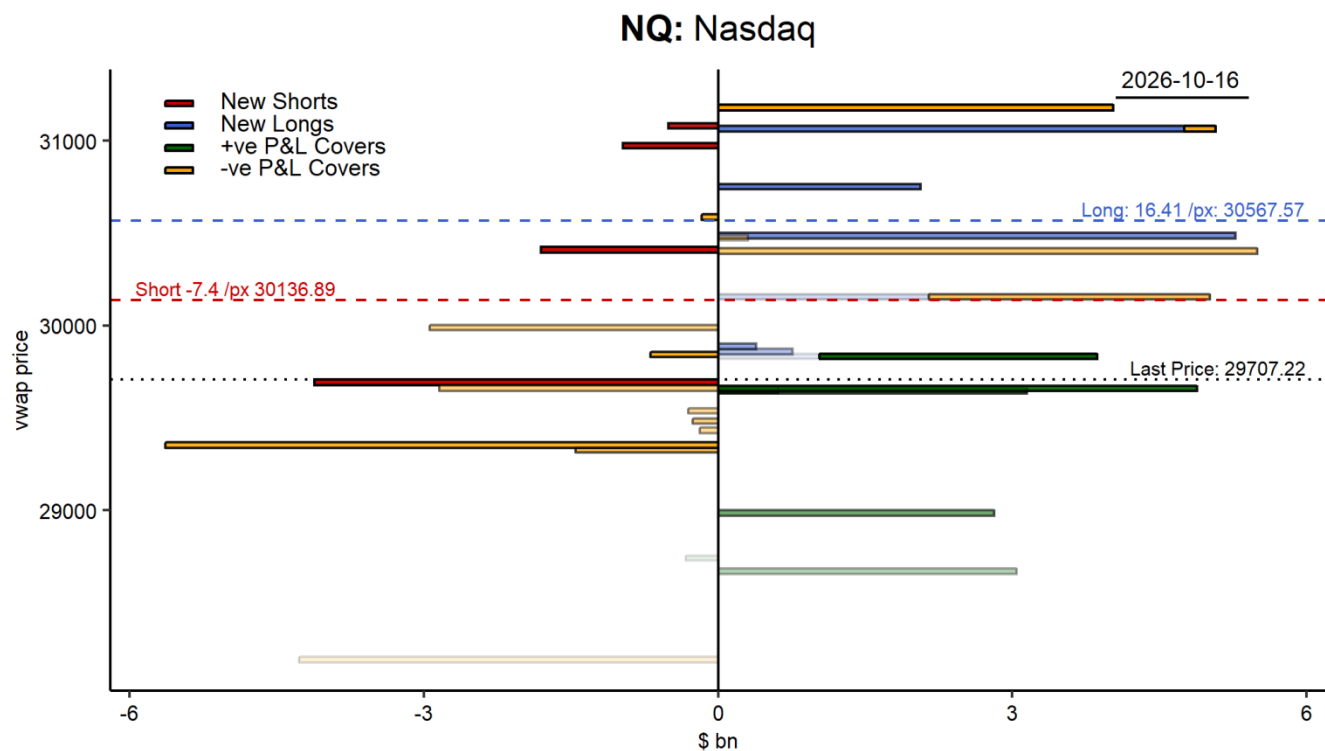
S&P 500

Figure 15. S&P 500 mini contract (ES) - position snapshot and time-series



NASDAQ 100

Figure 16. Nasdaq 100 contracts (NQ) - position snapshot and time-series

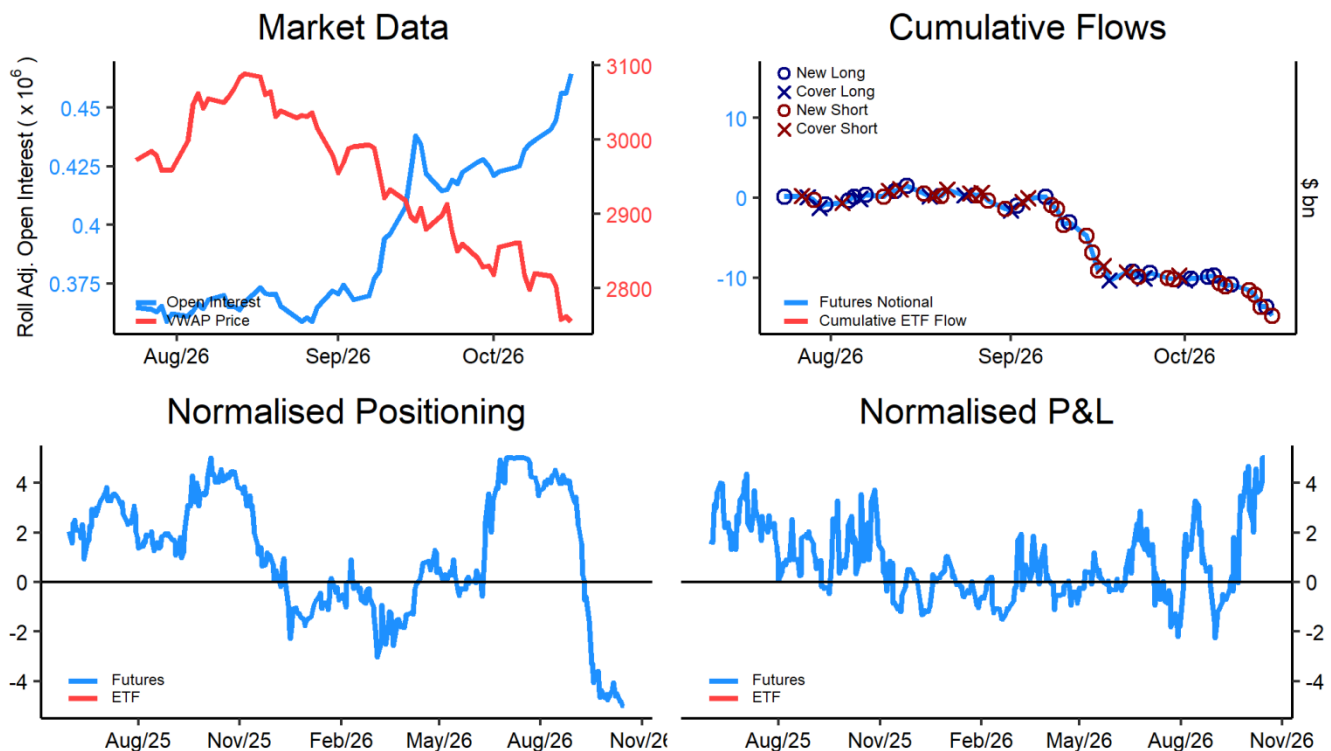
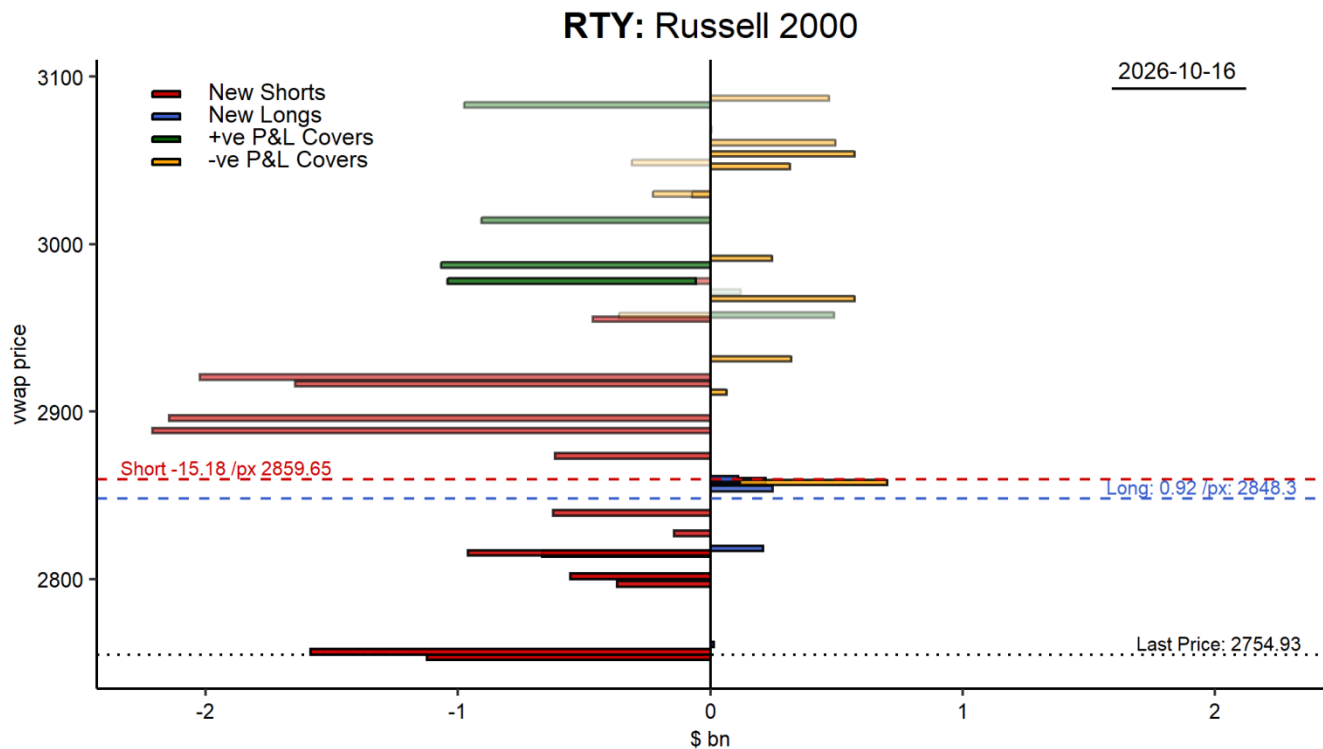


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Source: Citi Research, Bloomberg

Russell 2000

Figure 17. Russell 2000 contracts (RTY) - position snapshot and time-series

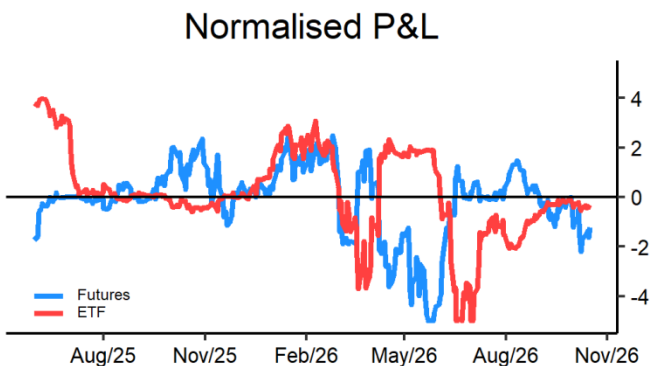
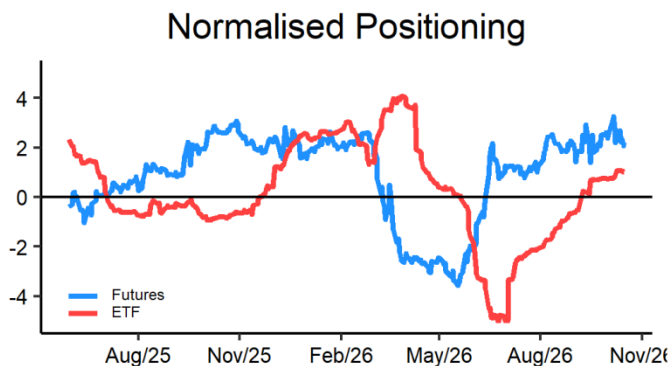
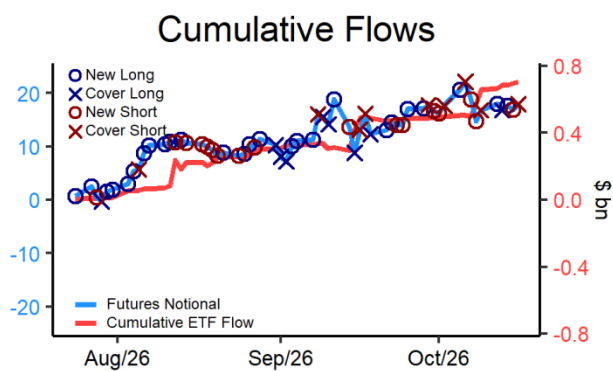
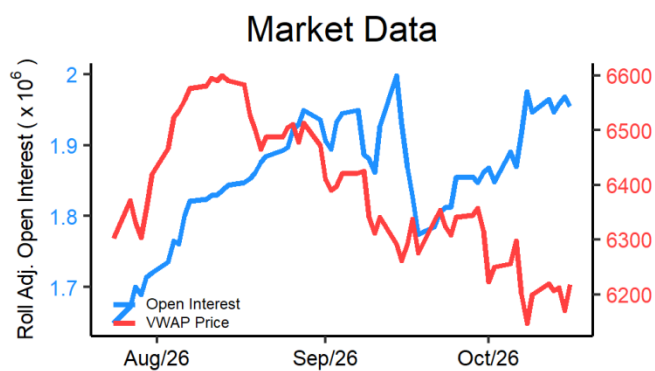
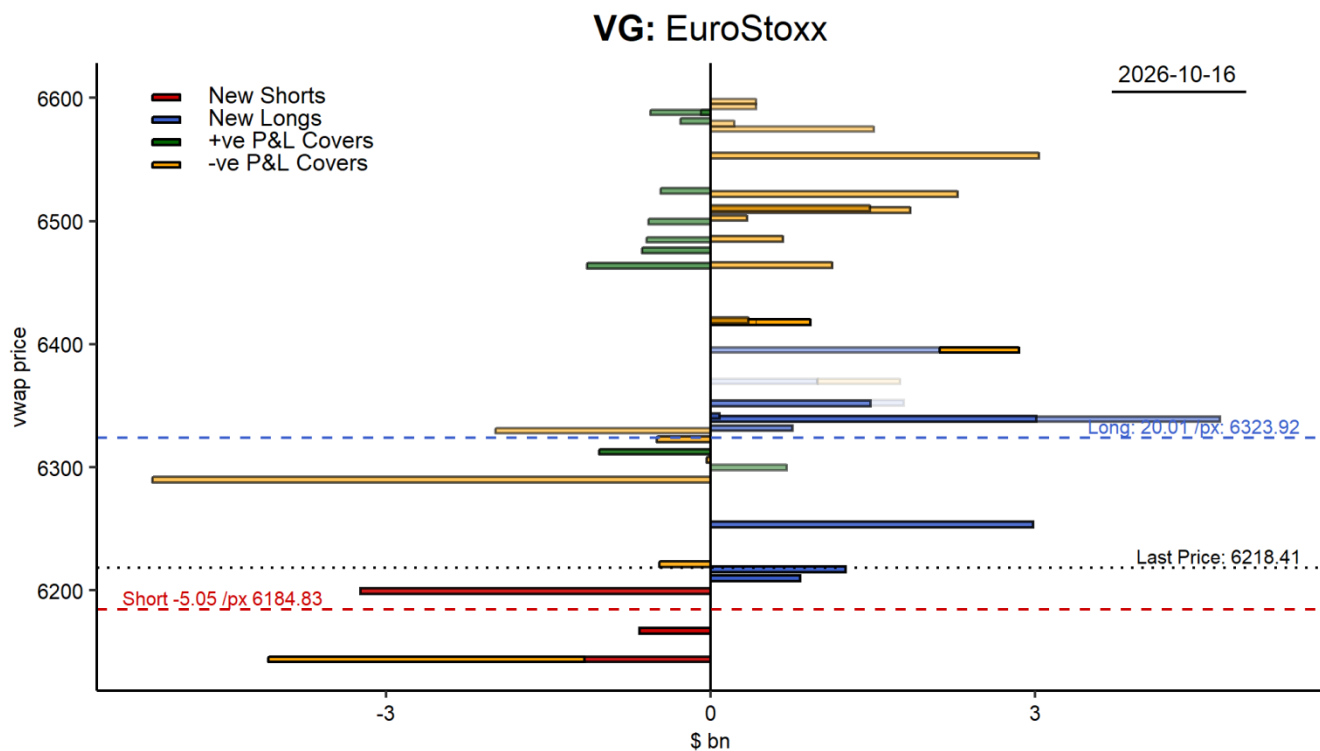


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Source: Citi Research, Bloomberg

EuroStoxx 50

Figure 18. Eurostoxx 50 contracts (VG) - position snapshot and time-series

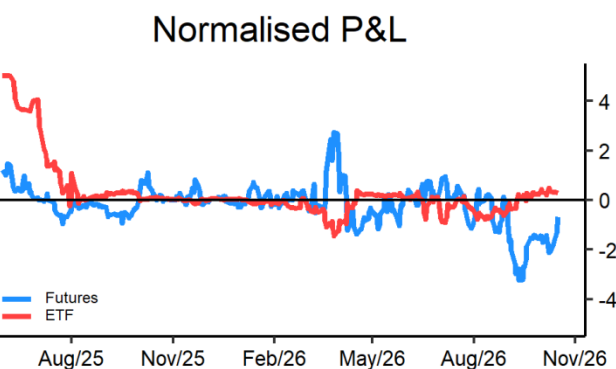
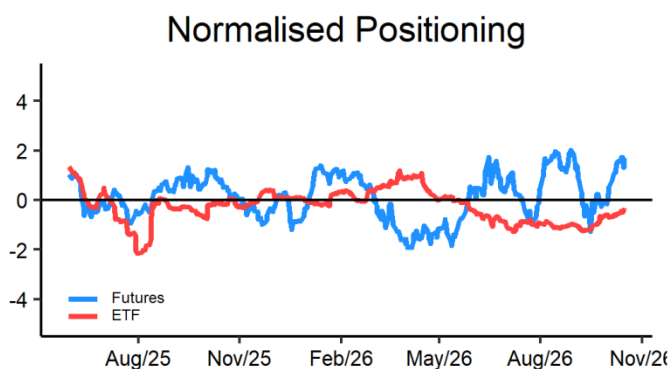
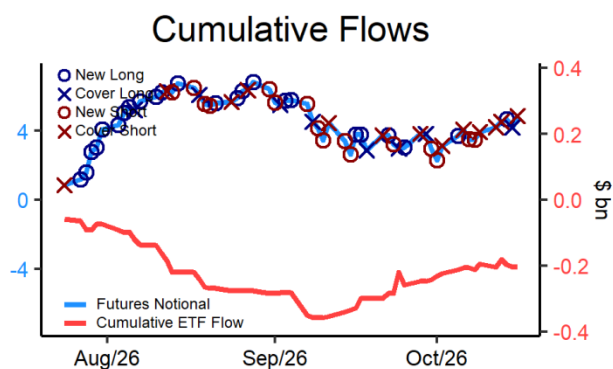
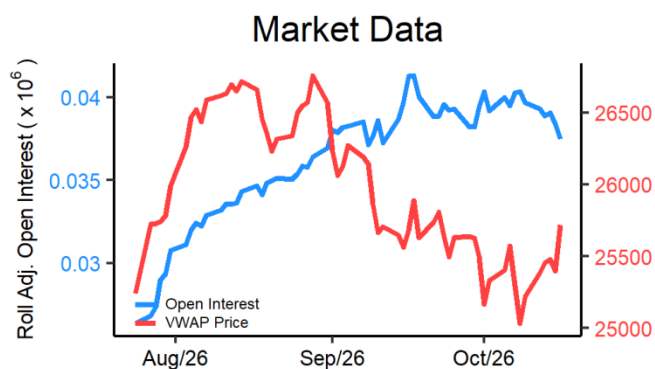
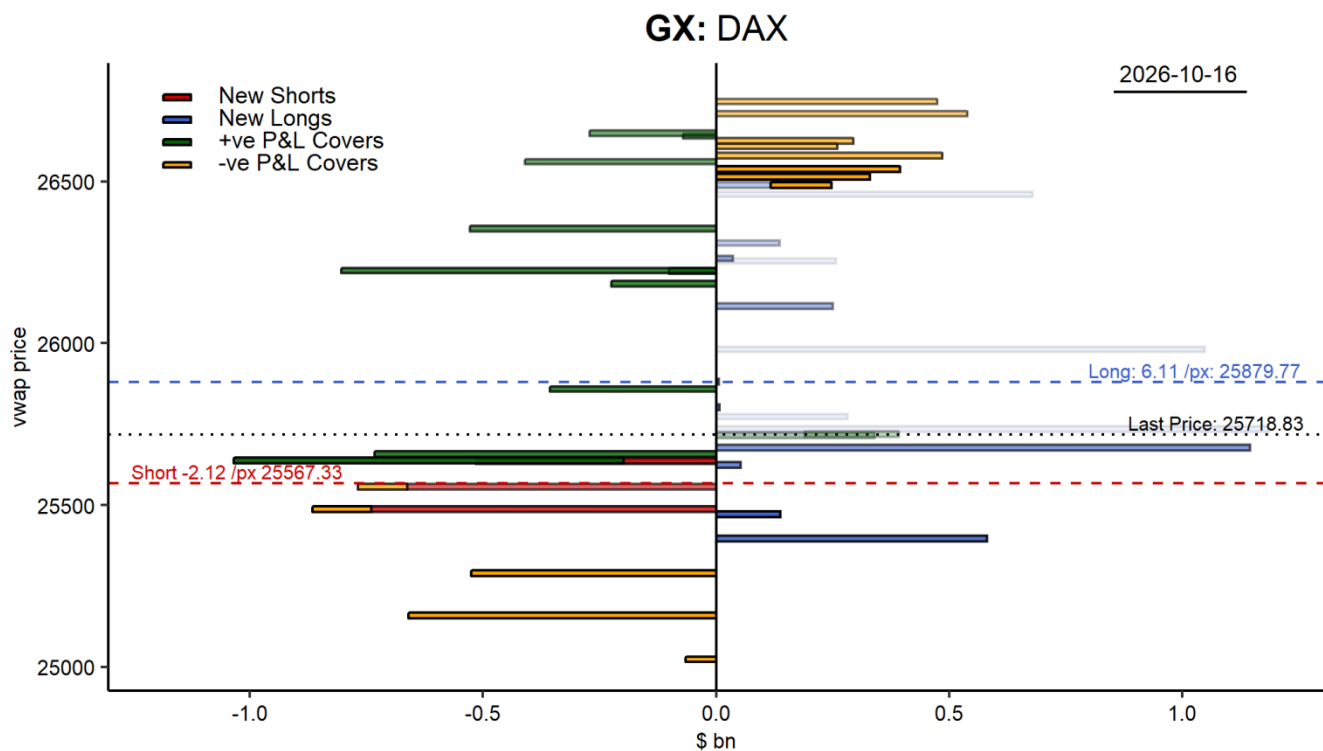


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Source: Citi Research, Bloomberg

DAX

Figure 19. DAX contracts (GX) - position snapshot and time-series

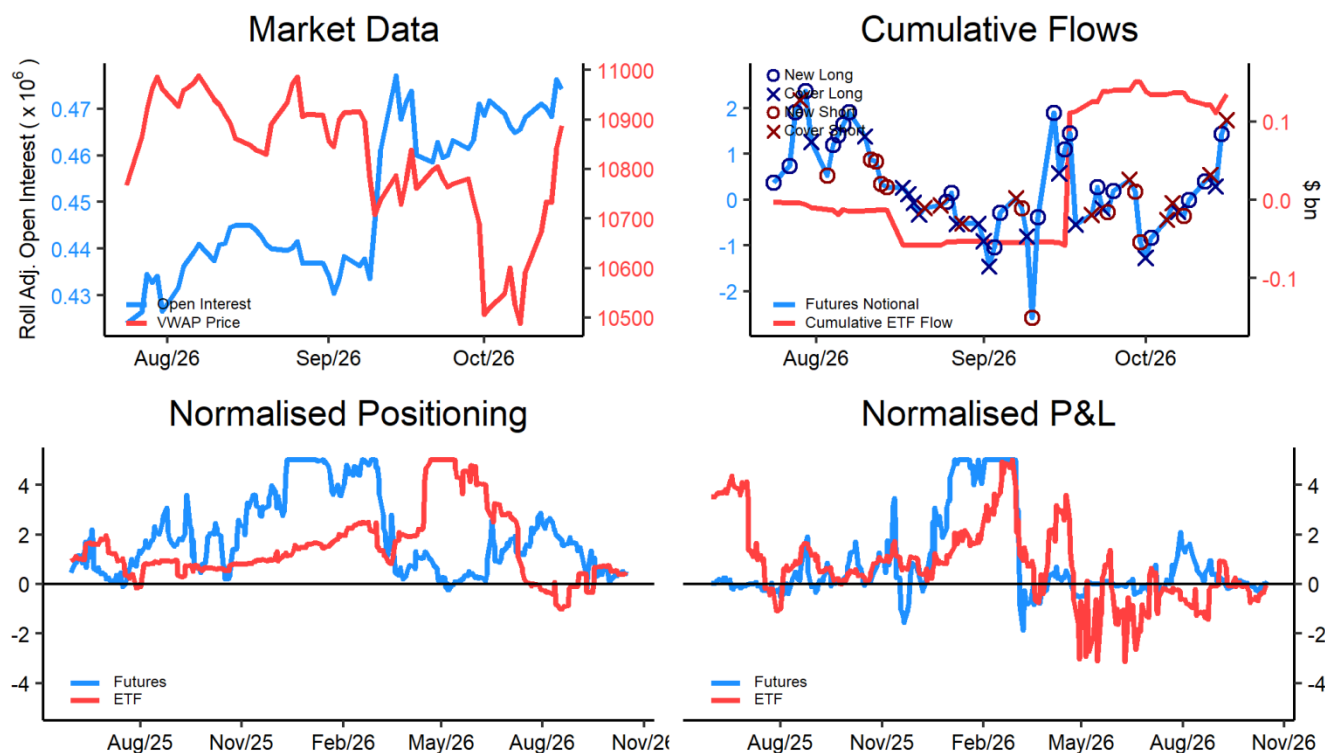
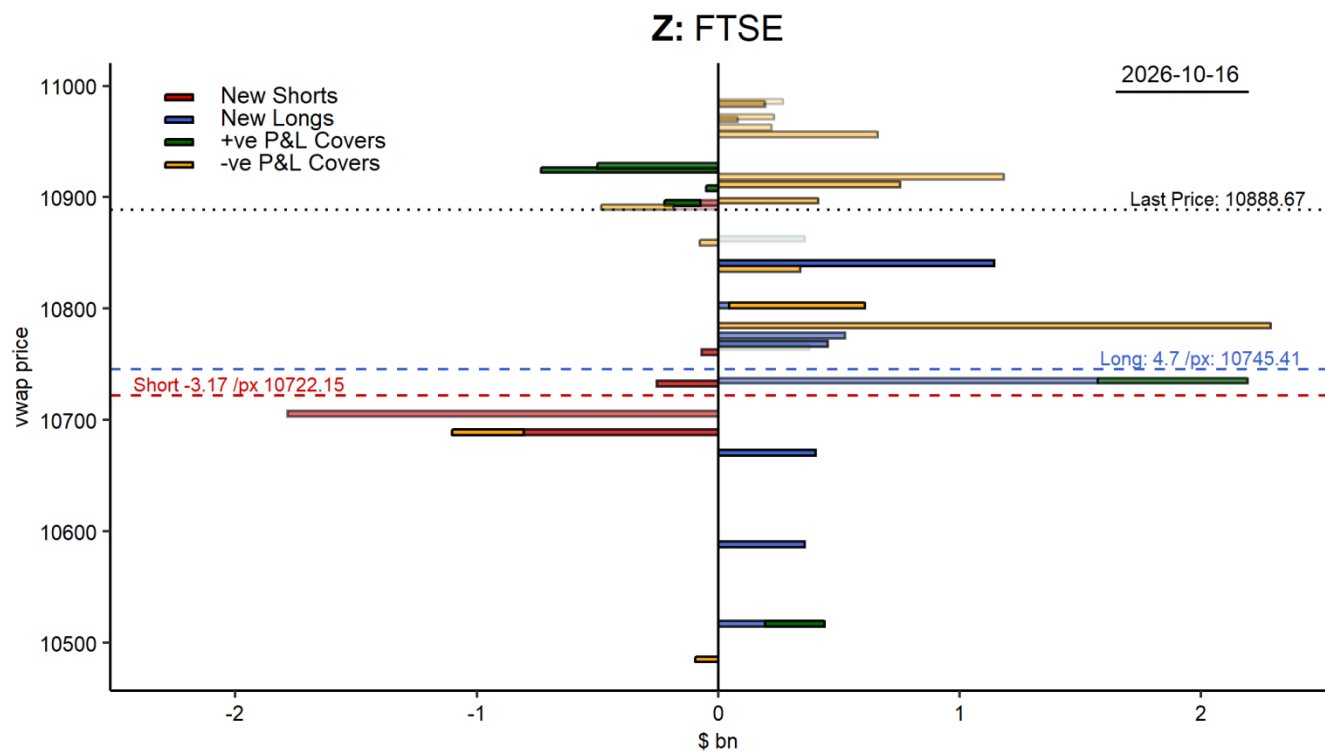


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Source: Citi Research, Bloomberg

FTSE 100

Figure 20. FTSE 100 contracts (Z) - position snapshot and time-series

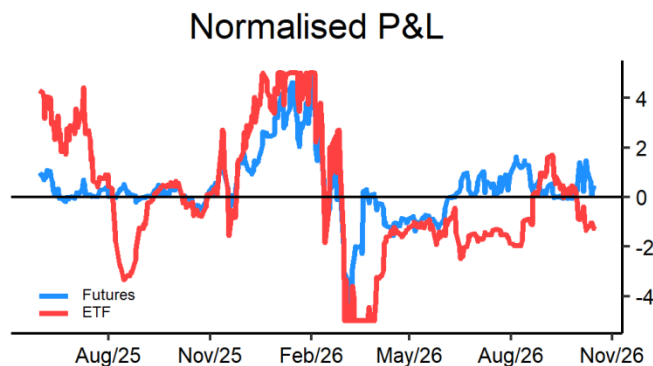
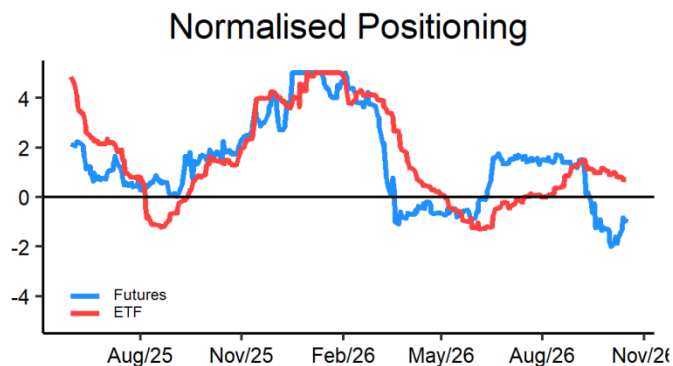
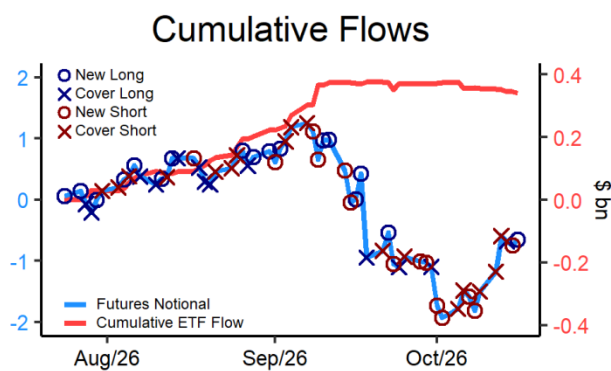
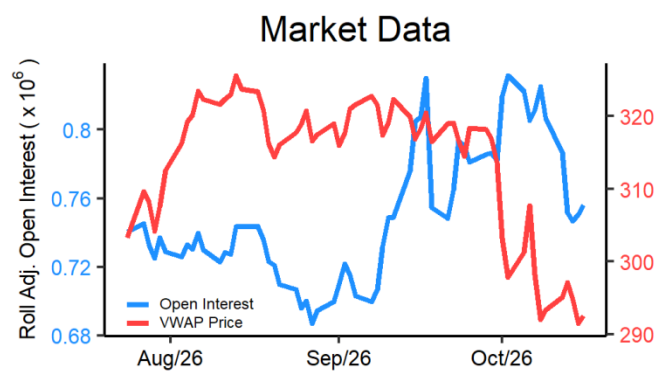
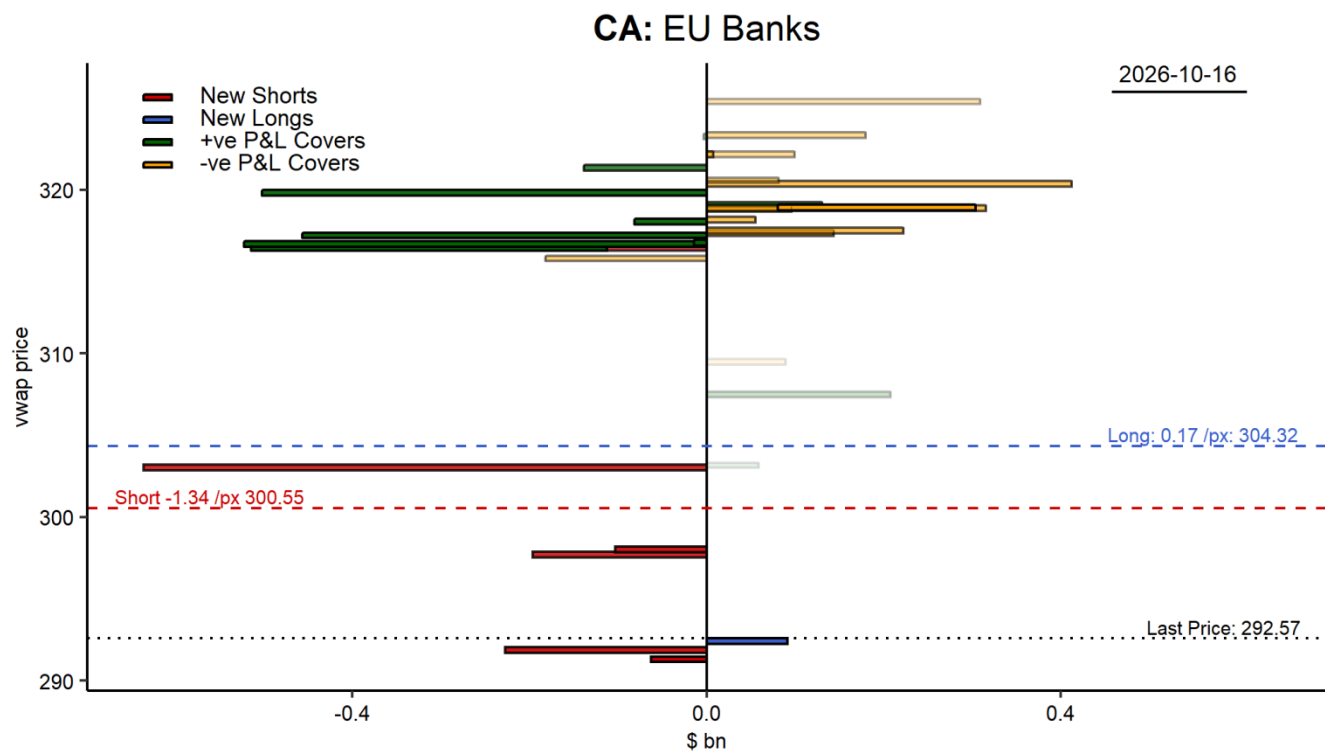


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Source: Citi Research, Bloomberg

European Banks (SX7E)

Figure 21. Eurostoxx Banks (SX7E) Equity contracts (CA) - position snapshot and time-series

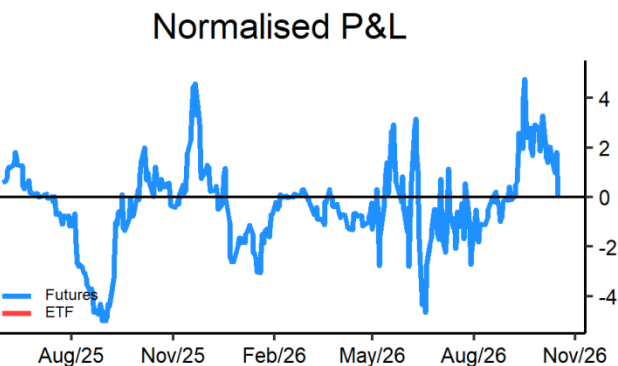
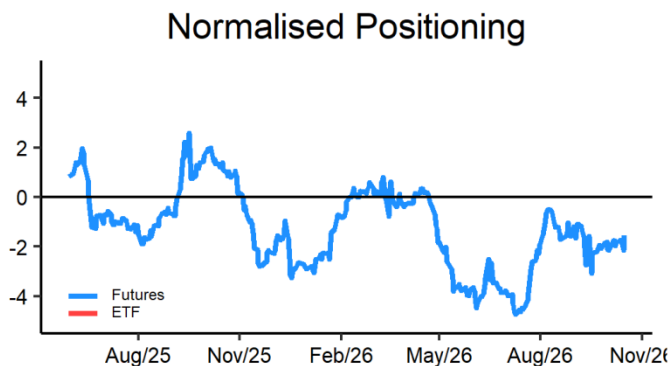
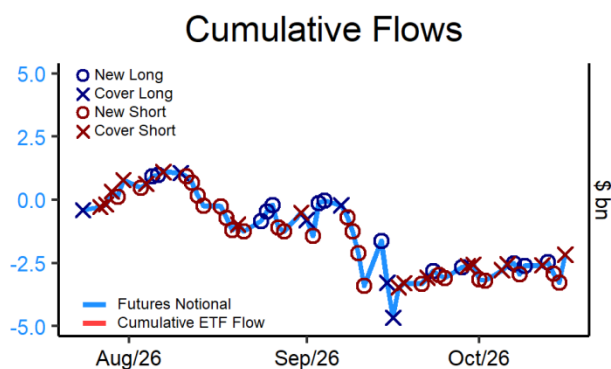
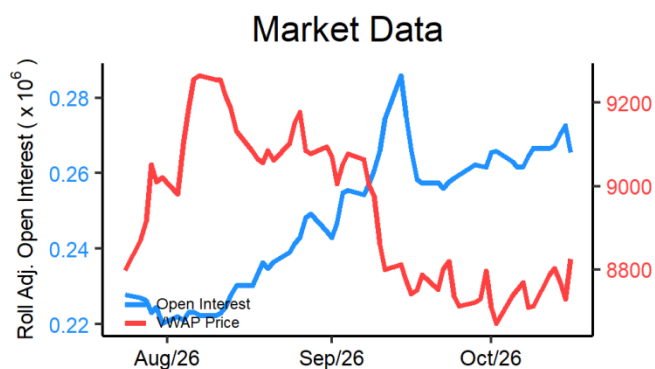
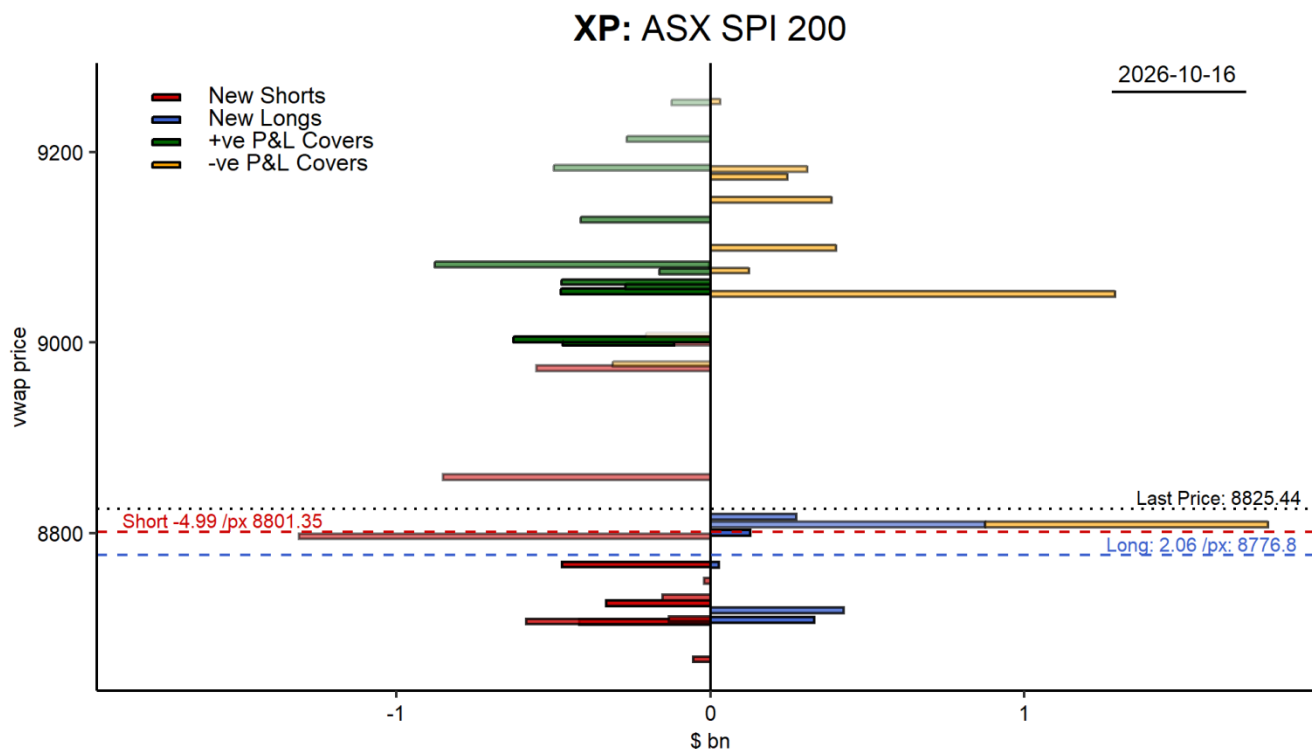


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Source: Citi Research, Bloomberg

S&P ASX 200

Figure 22. S&P ASX 200 Equity contracts (XP) - position snapshot and time-series

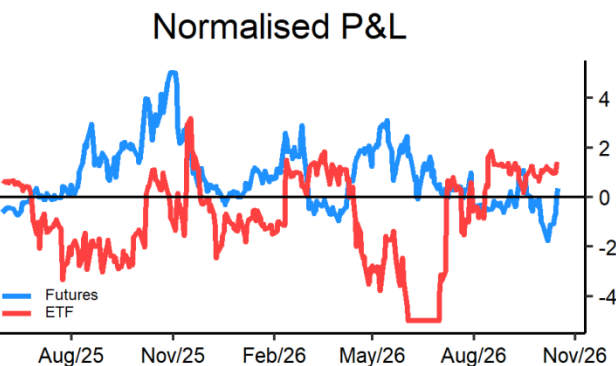
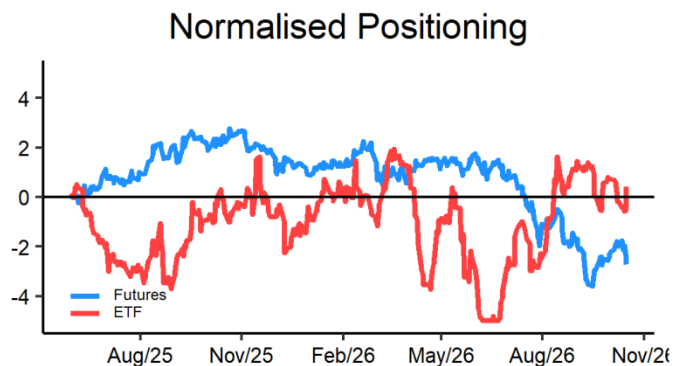
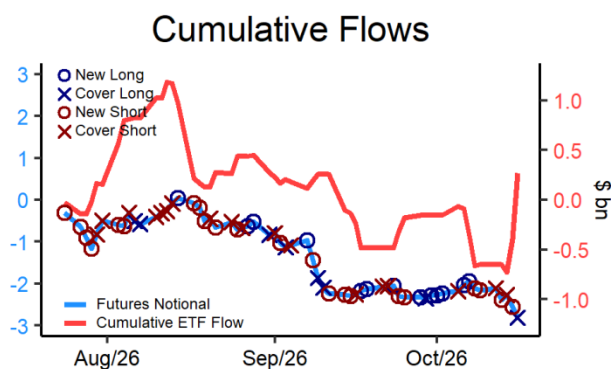
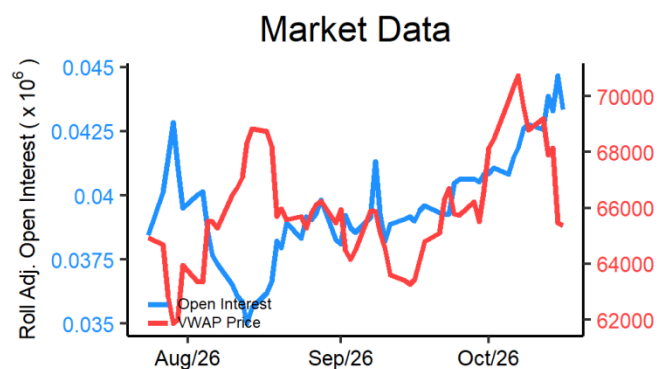
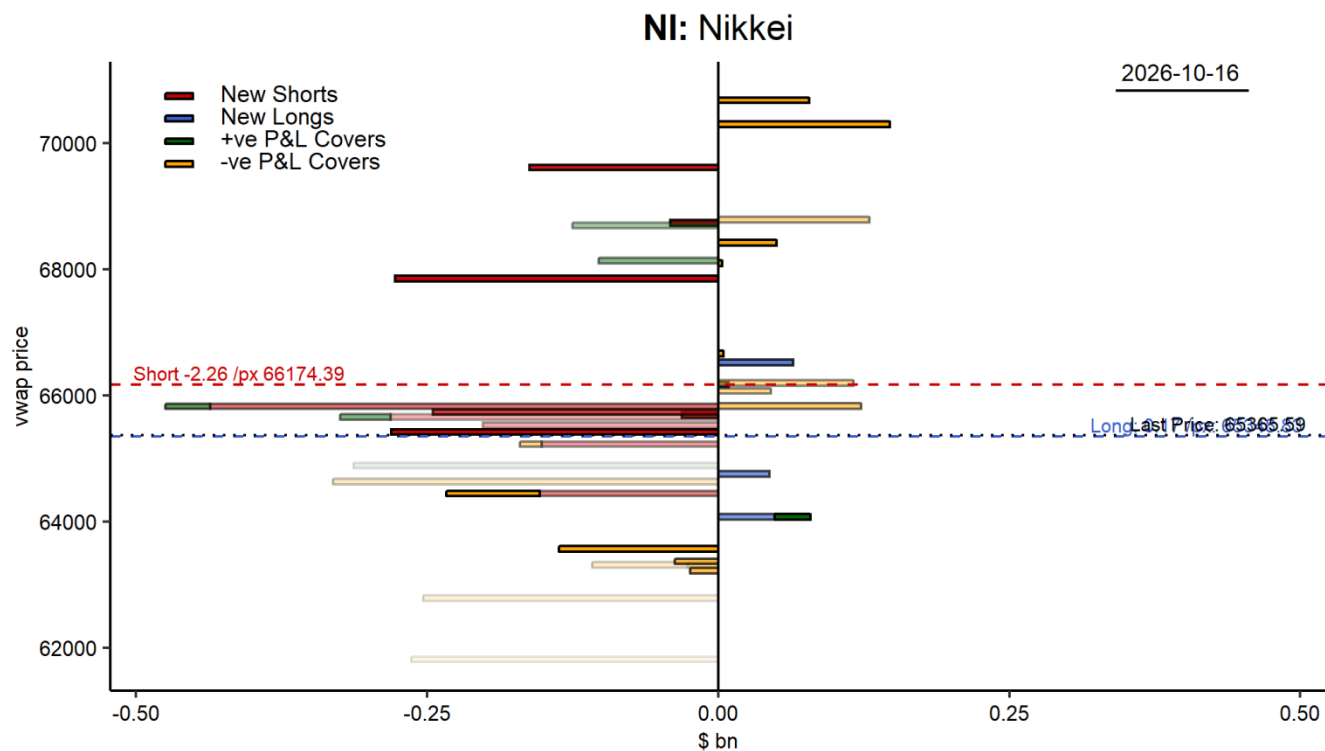


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Source: Citi Research, Bloomberg

Nikkei 225

Figure 23. Nikkei contracts (NI) - position snapshot and time-series

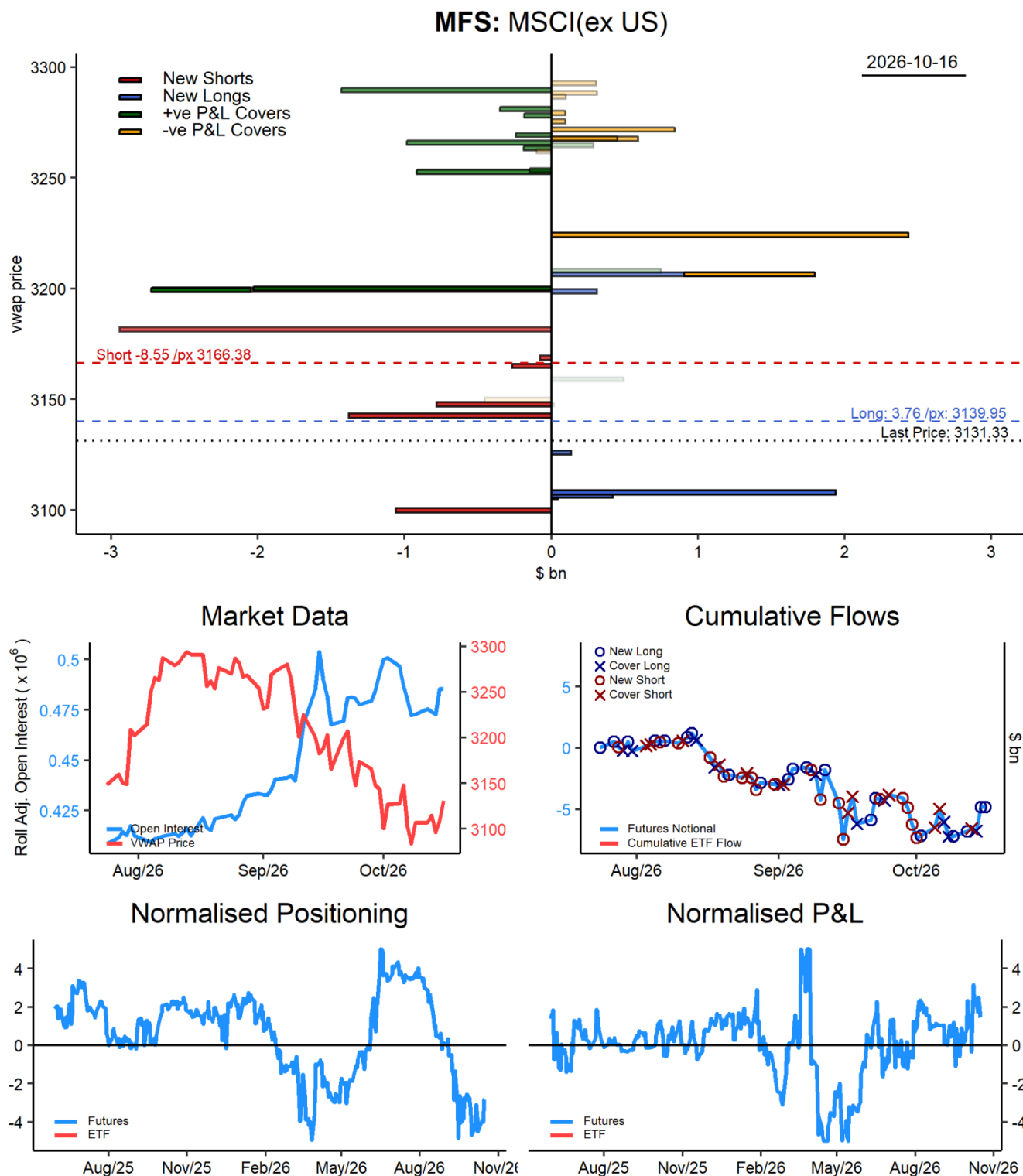


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Source: Citi Research, Bloomberg

MSCI EAFE

Figure 24. MSCI EAFE (DM ex-US) (MFS) - position snapshot and time-series

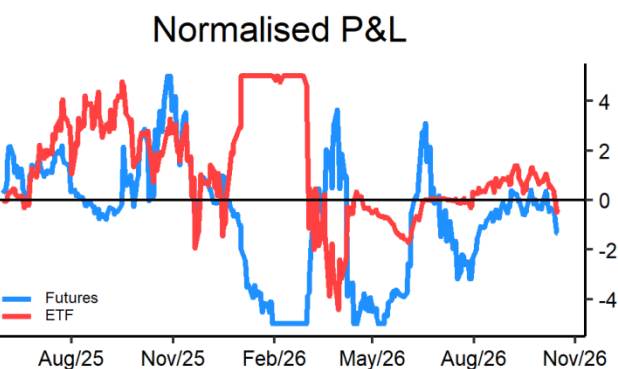
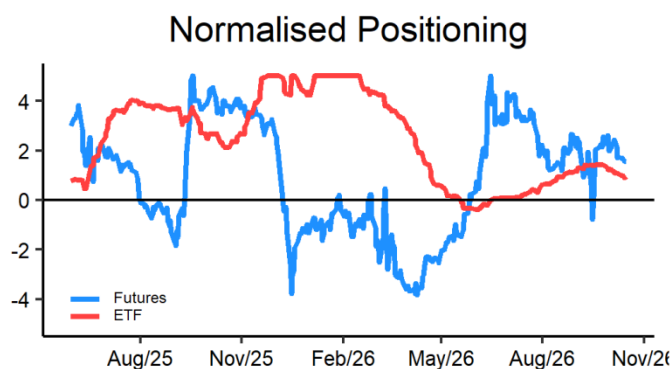
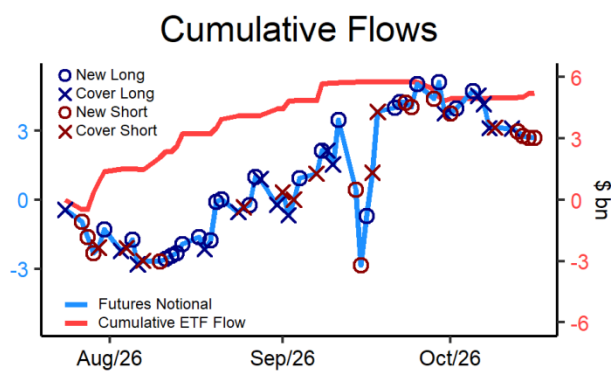
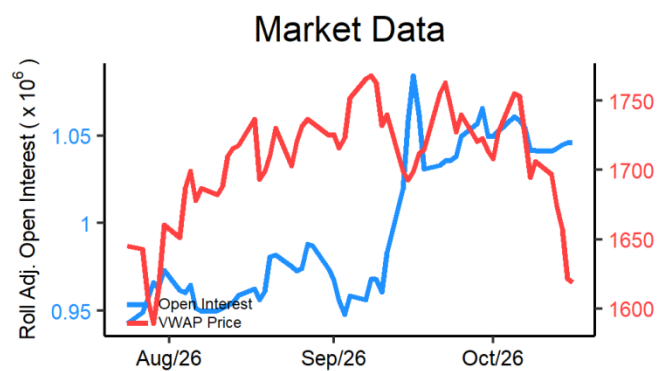
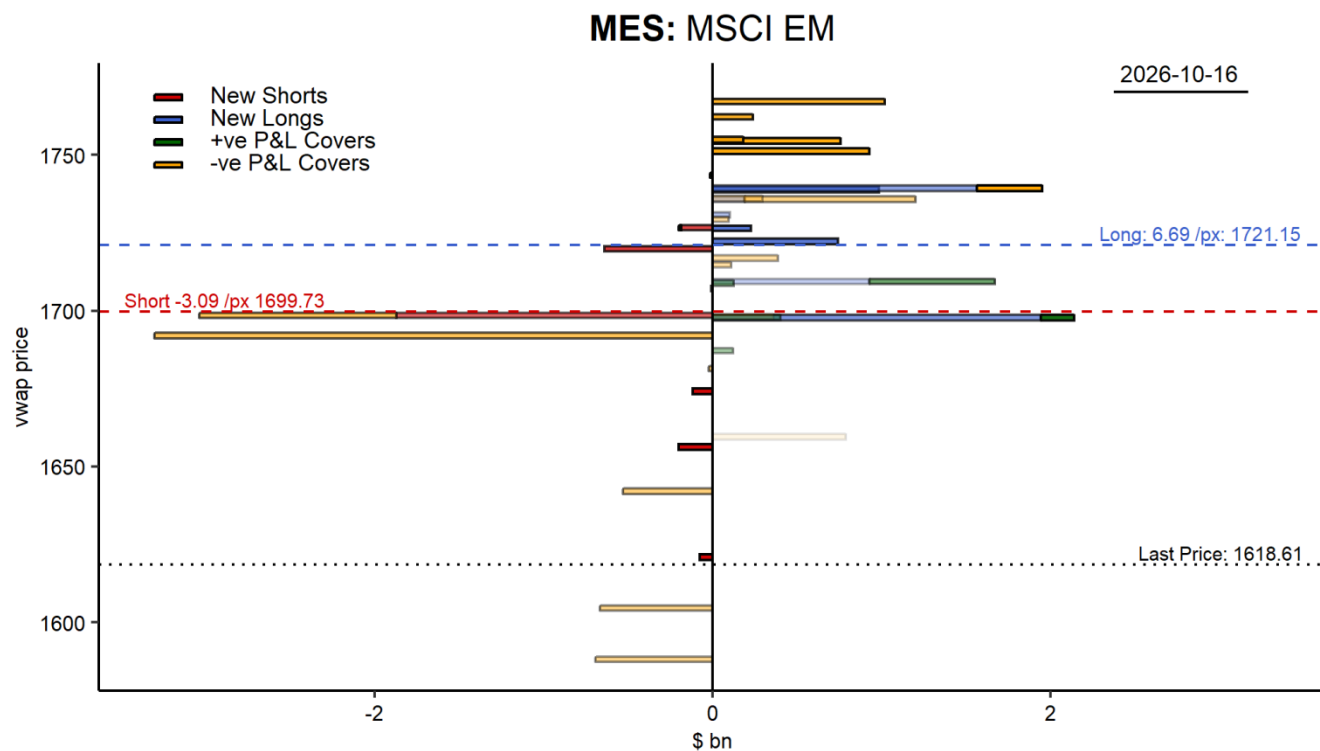


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Source: Citi Research, Bloomberg

MSCI EM

Figure 25. MSCI EM Equity contracts (MES) - position snapshot and time-series

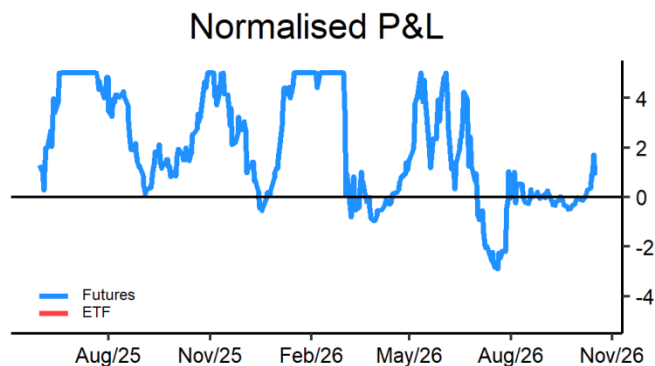
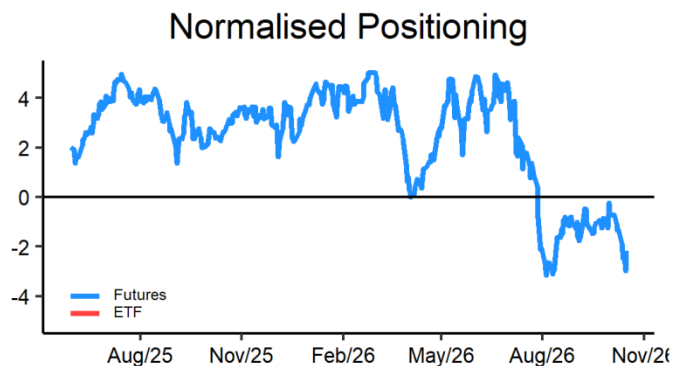
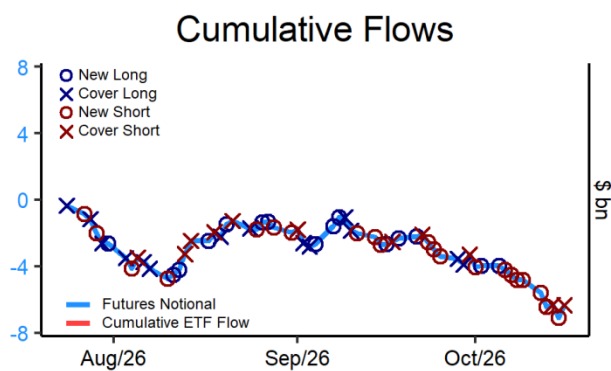
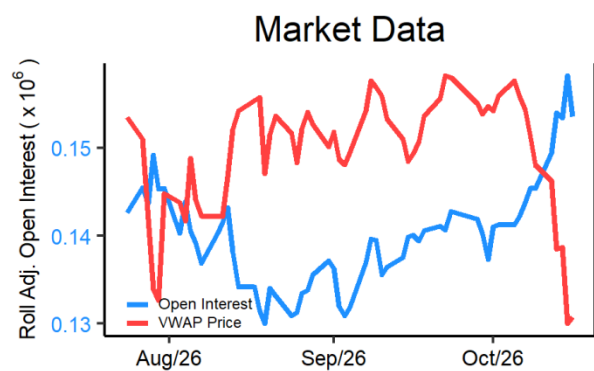
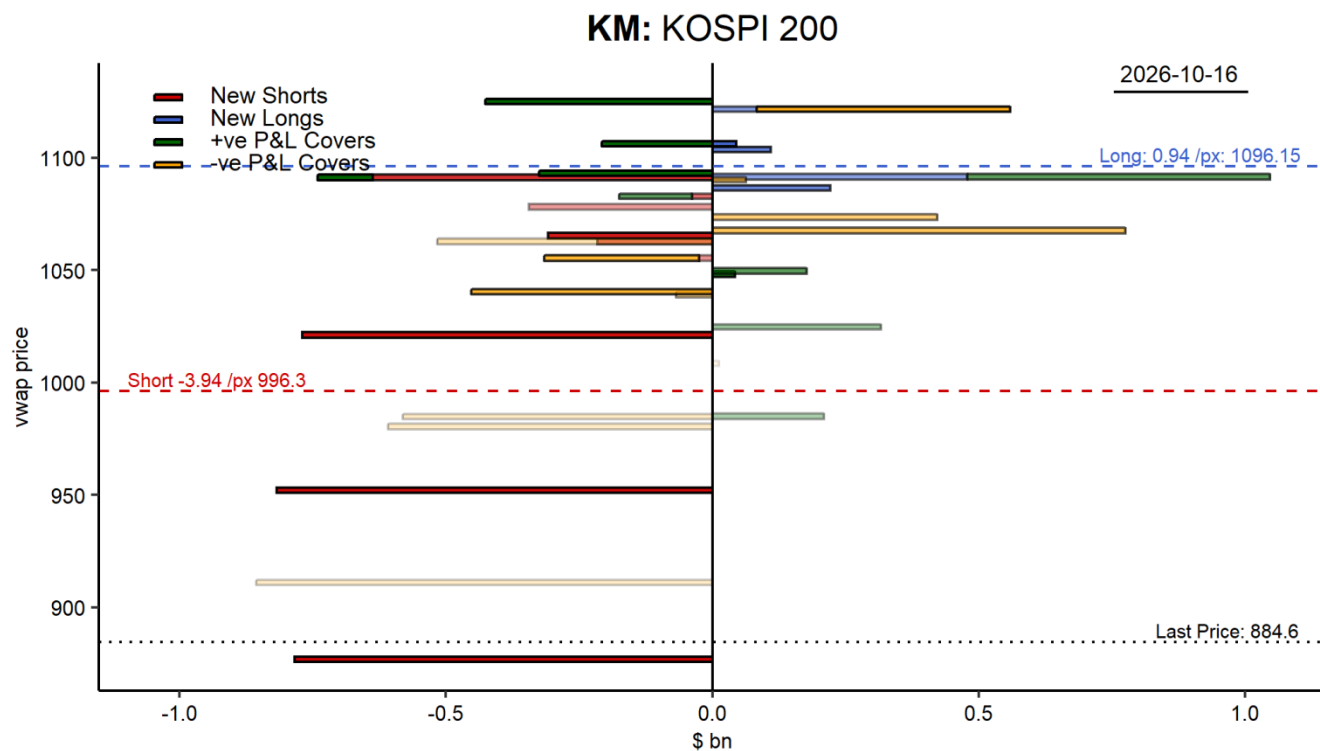


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Source: Citi Research, Bloomberg

KOSPI 200

Figure 26. KOSPI 200 contracts (KM) - position snapshot and time-series

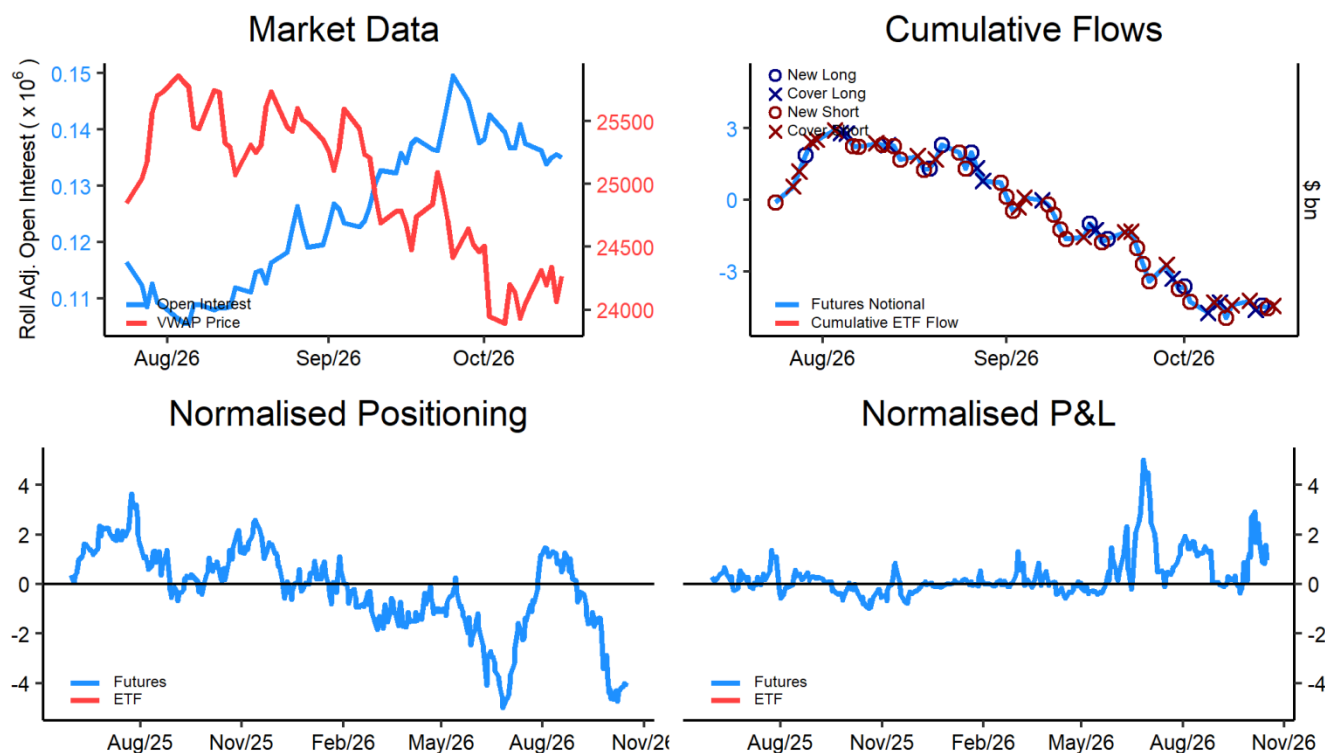
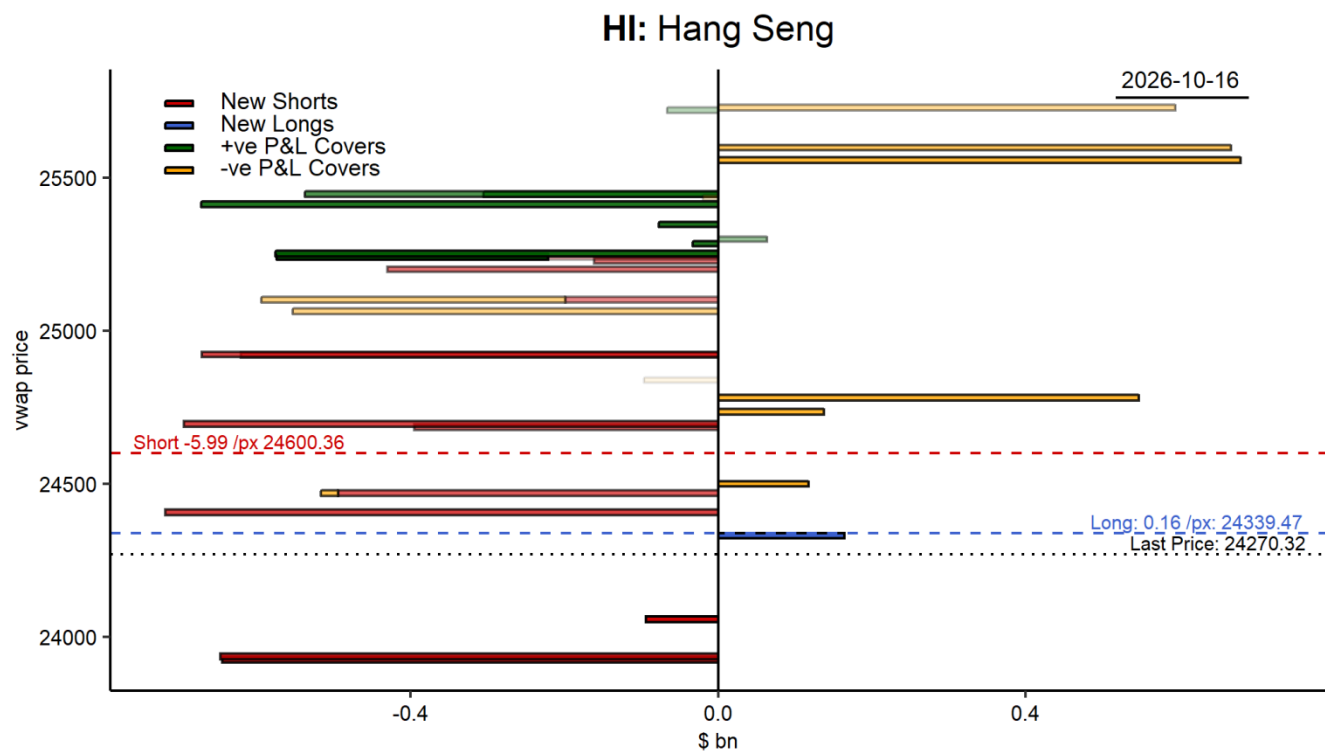


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Source: Citi Research, Bloomberg

Hang Seng

Figure 27. Hang Seng contracts (HI) - position snapshot and time-series

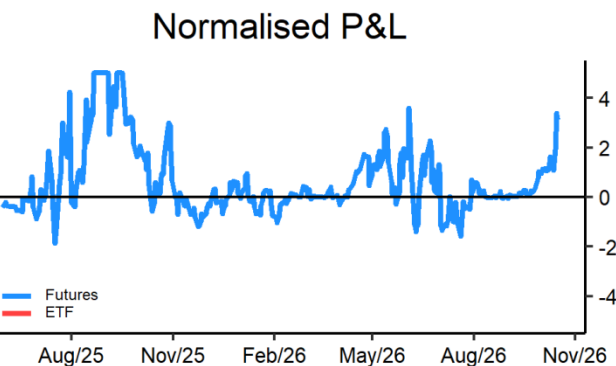
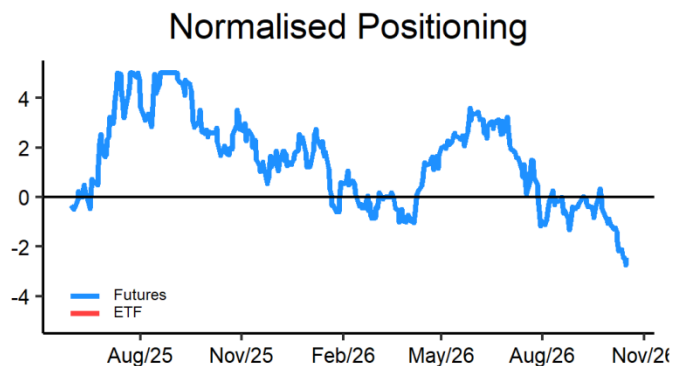
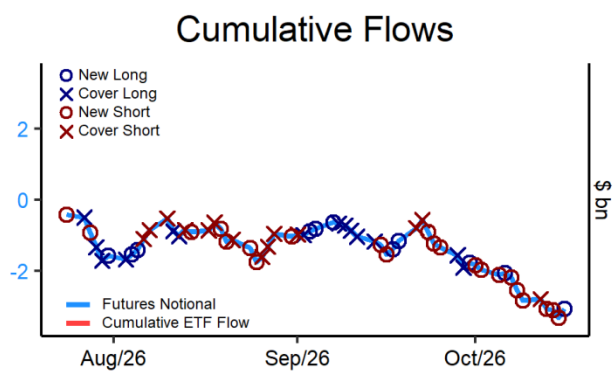
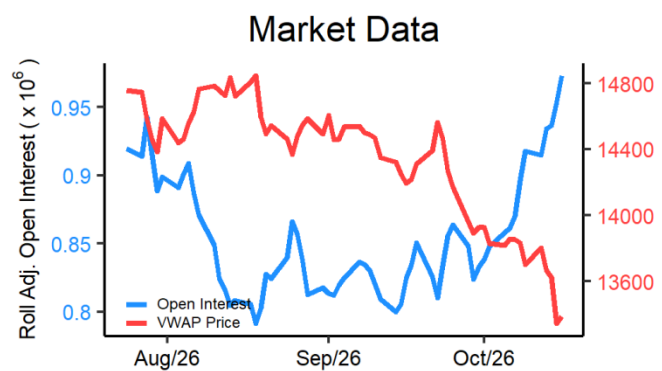
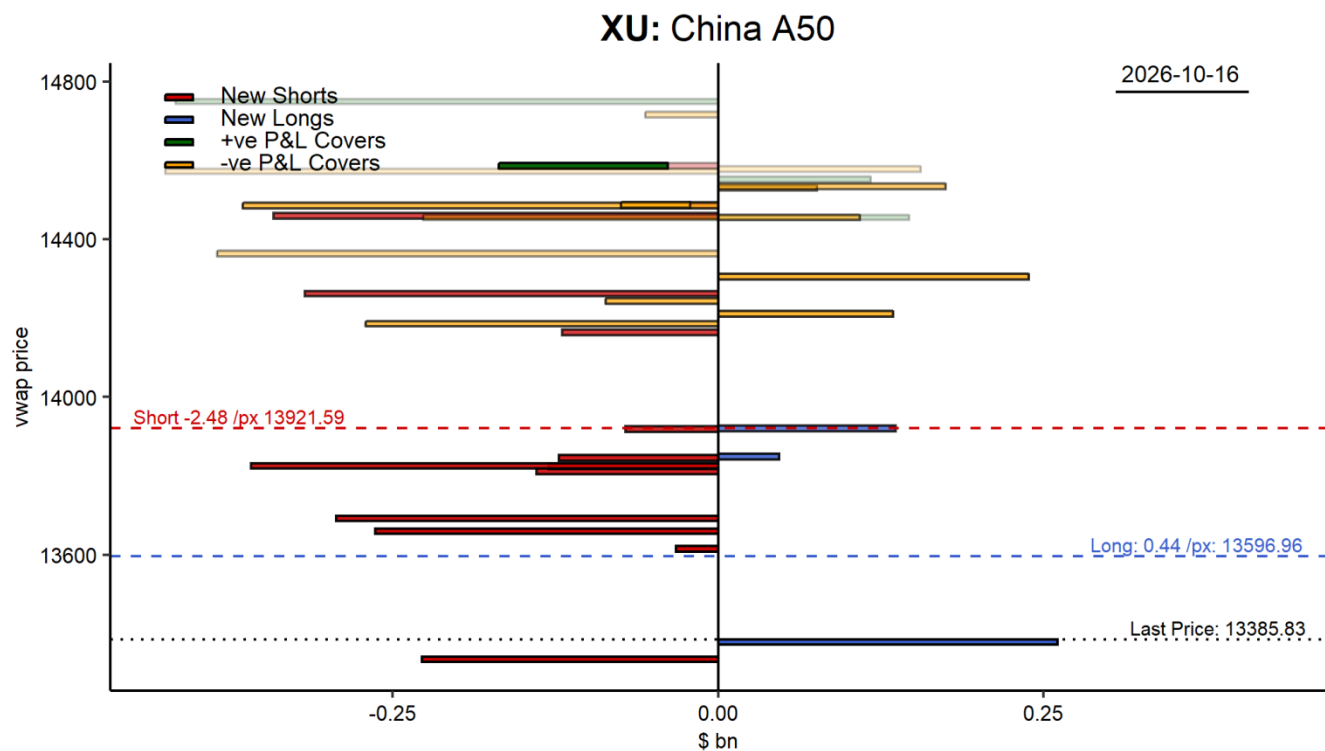


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Source: Citi Research, Bloomberg

China A50

Figure 28. A50 contracts (XU) - position snapshot and time-series



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The Equity Markets Positioning Model – Methodology

The aim of the Equity Markets Positioning Model (EMP) is to provide information on current equity market positioning and how this might influence subsequent price action. It allows readers to ‘visualize’ the investor exposures in equity futures across multiple markets in order to:

- Quantify the current market positioning and profitability;
- Identify extreme market positions;
- Categorize periods in which price action will be dominated by positioning;

The model calculates a ‘headline’ positioning score between -5 to 5 and provides a visualization of the current and past market.

How does the model work?

At a micro scale, price action is dominated by the size, level and speed at which investors choose to execute trades with other financial intermediaries. Buy/sell orders can clearly drive prices higher or lower and the EMP attempts to quantify these flows in order to understand the market direction and motivation.

This is a grand ambition, since there is no one market participant who holds a complete view of all market flows and we are only analyzing and aggregating futures trading to extrapolate the positioning across the whole market (i.e., including all cash trading). Based on this information, we estimate:

- Market positioning: What is the outstanding market positioning (i.e., has there been net buying or selling recent history)? At what price and size were these trades executed?
- Market P&L: What is the unrealized profit or loss within the market (given the current outstanding market positioning)? When is this a motivation for investors to risk manage their positions?

We recognize that there are limits to this analysis – incomplete trade visibility, opaque instruments and unknown investor trading strategies create uncertainty in the ‘true’ picture of high-level equity market positioning.

The EMP model calculates the historical equity market positioning (over the last 3mths) and the associated unrealized P&L for the main markets around the world. A breakdown of the assets and contracts used in the EMP are presented in Figure 29 and calculation methodologies are outlined below.

Figure 29. Equity Markets covered by EMP Model

Country/Region	Index	Futures Ticker	ETF Flows
US	S&P 500	ES	Yes
US Tech	Nasdaq 100	NQ	Yes
US SMID	Russell 2000	RTY	No
Europe	Eurostoxx 50	VG	Yes
Germany	DAX 40	GX	Yes
U.K.	FTSE 100	Z	Yes
European Banks	SX7E	CA	Yes
Australia	S&P ASX 200	XP	No
Japan	Nikkei 225	NI	Yes
EAFE	MSCI ex-US	MFS	No
Emerging Markets	MSCI EM	MES	Yes
Korea	KOSPI 200	KM	No
Hong Kong	Hang Seng	HI	No
China	A50	XU	No

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Source: Citi Research

Positioning Calculations

The model identifies an objective subset of positions entered into (or closed) on a given day and classify these as being the relevant marginal long or short positions that determined (being the 'aggressor') the price move that day. In the report and in our analysis, we will simply refer to these positions as longs, shorts, and net position, but they will always be a reference to this concept of a marginal positioning. This presumption then is that this subset of marginal positions are the most price sensitive, i.e., more likely to generate new flows (e.g., profit taking or squeezes) in response to future price moves.

In practice, the model uses public trade activity data on the exchange traded futures contracts, which is available daily. Naturally, net positioning is always zero for s, since the exchange matches buyers and sellers and creates and cancels contracts as necessary. However, by tracking the daily changes in overall open interest (the number of contracts after the exchange create or cancels contracts) and combining that measure with the change in price we can make a classification for the marginal positioning change on that day, as set out in Figure 30.

The change in open interest is taken to be the relevant marginal subset of positions that day and together with the change in price, we determine whether to consider it a change in long or short positions.

Figure 30. Positioning Matrix for Futures Markets

		Open Interest	
		Increasing	Decreasing
Daily Prices	Increasing	New Longs Rising prices and increasing open interest implies the 'aggressor' is the buyer pushing the market higher	Cover Shorts Rising prices and decreasing open interest implies the 'aggressor' is covering shorts (i.e. buying into the rally)
	Decreasing	New Shorts Falling prices and increasing open interest implies the 'aggressor' is the seller pushing the market lower	Cover Longs Falling prices and decreasing open interest implies the 'aggressor' is covering longs (i.e. selling into the sell-off)

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Source: Citi Research

Performing this analysis on a day-by-day basis creates a ‘trade activity’ history over a three-month period which can be converted into a snapshot of cumulative positioning and unrealized P&L. To illustrate the methodology, it is useful to look at a worked example. In Figure 31, we present these calculations for S&P 500 futures in early March 2020.

In this period, open interest increased and prices fell, suggesting an increase in the short investor base. The model shows numerous days where new short positions have been opened and relatively few where long positions have been established, in addition to covering for some long and short positions. At the end of the period the cumulative uncovered positions and P&L is a simple the sum of the outstanding positions/P&L (see “total” in Figure 31 – cumulative positions equate to -459,041 contracts and 868mIn of unrealized P&L).

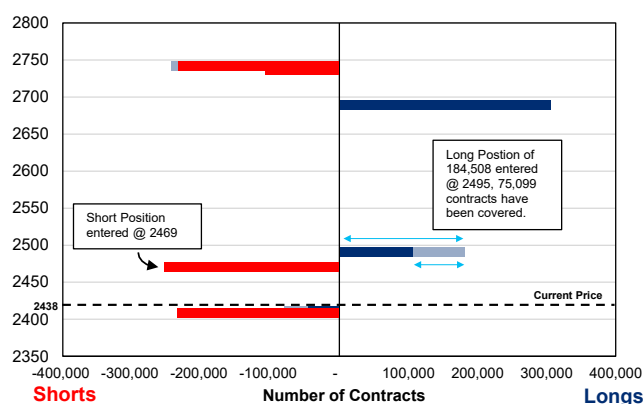
This positioning can be visualized as a horizontal bar graph ordered by price (see Figure 32). It can be clearly seen that the shorts were centered around 2740-2750 and the positions were significantly in the money. This contrasts with the big long position at 2696, which with a falling market, was losing position. This snapshot of positioning can be summarized by the cumulative position unrealized P&L levels.

Figure 31. Example of positioning for S&P500 during March 2020

Date	Trade Price	Open Interest	Delta Price	Delta Interest	Trade Activity	Contract Buy/Sell	Cum. Pos.	P&L Snapshot (\$ mil)
06-Mar	2964.0	3,213,000						
09-Mar	2747.8	3,442,251	-7.3%	229,251	New Short	-229,251	-229,251	3,551
10-Mar	2865.8	3,438,501	4.3%	-3,750	Cover Short	3,750	-225,501	-58
11-Mar	2740.3	3,549,717	-4.4%	111,216	New Short	-111,216	-336,717	1,681
12-Mar	2469.0	3,808,784	-9.9%	259,067	New Short	-259,067	-595,784	402
13-Mar	2696.0	4,124,586	9.2%	315,802	New Long	315,802	-279,982	-4,074
16-Mar	2416.3	4,369,586	-10.4%	245,000	New Short	-245,000	-524,982	-266
17-Mar	2495.5	4,554,094	3.3%	184,508	New Long	184,508	-340,474	-531
18-Mar	2414.0	4,628,421	-3.3%	74,327	New Short	-74,327	-414,801	-89
19-Mar	2403.3	4,553,322	-0.4%	-75,099	Cover Long	-75,099	-489,900	216
20-Mar	2438.0	4,522,463	1.4%	-30,859	Cover Short	30,859	-459,041	37
Total							-459,041	868

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Source: Citi Research

Figure 32. Example visualization of positioning



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In EMP, the daily volume weighted average price (VWAP) is used in the calculations (rather than closing prices), since it creates more robust results. In addition, the EMP model chooses to cover trades that have the maximum economic impact (i.e., trades with the largest gains or losses are closed out first). However, in every other aspect, the methodology is identical to the one presented above.

Finally, the reported numbers in the EMP model are normalised into a range from -5 to +5 (representing large shorts/losses to large longs/profits) in order to compare across asset/instruments.

What output is generated by EMP?

The EMP model provides a snapshot of the current positioning (see Figure 33 to Figure 35). These tables summarize the outstanding exposure and unrealized P&L (for a 3mth period in both futures and ETFs).

Typical output is shown in Figure 33 for cross equity market positioning in futures. In this illustration, investors are currently neutral to net short Eurostoxx 50 contracts, which has decreased from a net long position of the past 3 months. This is in contrast to MSCI EM futures where investors are sitting on profitable positions.

Figure 33. Example of Equity Market Positioning and PnL

All metrics in table are normalised between +5 and -5

Investors currently net long S&P 500 Emini futures

Investors currently neutral to net short EuroStoxx 50

(\$bn) 03/09/2020		S&P 500	DAX	FTSE 100	ESToxx50	Nasdaq	Nikkei	MSCI World x-US	MSCI EM
		ES	GX	Z	VG	NQ	NI	MFS	MES
Normalised Scores (-5 / +5)									
Positioning	Future	1.7	-0.1	1.0	-0.0	4.8	1.1	-0.7	2.0
	ETF	3.0	1.4	-0.6	0.9	3.6	1.0		1.1
	3m Net Pos	2.3	0.7	0.2	0.4	4.2	1.1	-0.7	1.6
	1w Change	0.4	0.2	0.3	0.3	-0.3	0.3	-0.4	-0.3
P&L	Future	1.2	-0.1	-0.7	-0.0	4.8	0.5	0.1	1.8
	ETF	3.7	1.9	-0.5	1.1	3.9	1.3		1.4
	3m Net PnL	2.5	0.9	-0.6	0.5	4.4	0.9	0.1	1.6
	1w Change	0.3	0.3	-0.0	0.3	-0.4	0.3	0.0	-1.1

Investors are sitting on profitable positions in MSCI EM.

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Source: Citi Research

In addition, we further break down market positioning by analyzing both long and short positions, the average entry price and the position relative to trading over the past three months (Figure 34).

Figure 34. Example of Breakdown of Market Positioning – Not Current

Net Notional = Longs minus Shorts (in \$blns)

Percentile refers to positioning relative to past 3 years

% Offside refers to what percentage of shorts are below Ref price – indicates risk of short squeeze if market rallies. Opposite for Longs

		S&P 500	DAX	FTSE 100	ESTOxx50	Nasdaq	Nikkei	MSCI World x-US	MSCI EM
(\$bn)	03/09/2020	ES	GX	Z	VG	NQ	NI	MFS	MES
Futures	Net Notional	31.7	-0.1	2.4	-0.4	10.8	1.2	-1.1	6.4
	Percentile	67%	36%	53%	33%	99%	64%	11%	75%
Shorts	Notional	-7.5	-1.3	-3.9	-1.4	-1.6	-1.1	-2.7	-0.7
	Percentile	24%	37%	81%	24%	28%	20%	80%	21%
	Avg. Entry	3,246	12,994	6,116	3,316	10,993	22,959	1,890	1,089
	% offside	100%	100%	3%	100%	100%	100%	32%	89%
Longs	Notional	39.2	1.2	6.3	0.9	12.4	2.3	1.6	7.0
	Percentile	57%	18%	72%	10%	99%	25%	18%	67%
	Avg. Entry	3,337	13,068	6,096	3,311	11,166	22,889	1,893	1,051
	% offside	13%	0%	100%	0%	18%	0%	60%	38%
	Ref Price	3,463	13,304	5,909	3,366	11,803	23,490	1,878	1,094
Activity	1-day	-2.6	-0.2	0.0	-0.1	-0.9	0.3	0.0	0.0
	Type	longs	shorts	longs	shorts	longs	longs	shorts	shorts
	1-week	4.2	0.1	0.1	-0.5	-0.4	0.1	-0.7	0.5

Average entry price over past 3 months

1 day trading activity in \$blns. Negative (positive) means risks is being cut (added)

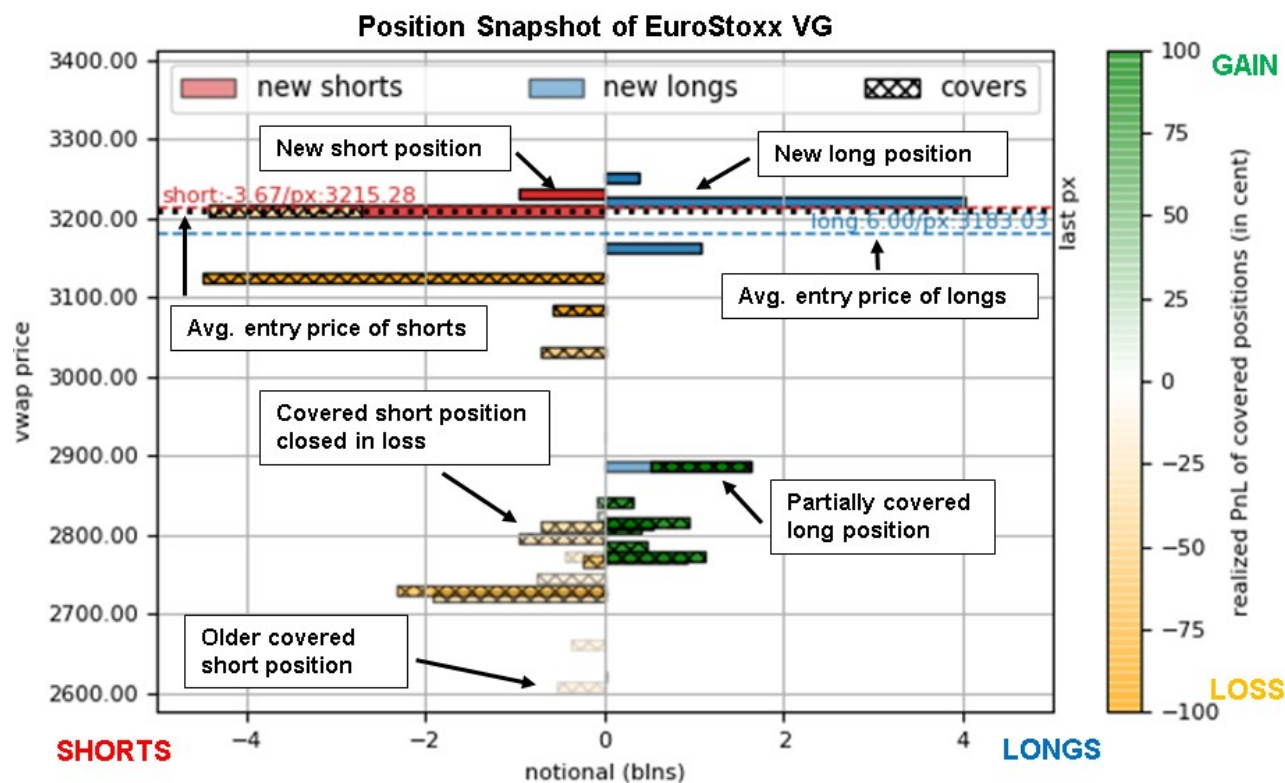
Defines what side the risk is being traded

1 week cumulative trading flow

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Source: Citi Research

Lastly, a complete visualization of the positioning is presented in Figure 35. This shows the current positioning ordered by VWAP prices over a 3-month period. The bars in the chart illustrate the level at which trades were executed (red = short positions and blue = long positions). The lighter bars imply older trade activity. When a trade is covered the bar is hashed with XXX and the color of the shading represents if it was covered at a gain or loss (yellow=loss, green=gain). The horizontal red and blue dotted lines show the respective average entry price of contracts over the past three months.

Figure 35. Example Snapshot of Position in EuroStoxx Futures – Not Current



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Source: Citi Research

What it means for Cash Equities

Although traditionally used as a hedge, futures are also used by investors for taking an outright view on markets. This becomes increasingly relevant when futures positioning is extended. We explore this content in greater detail in [Regime Modelling using Futures Positioning: Futures vs. Cash – A Distant but Meaningful Relationship](#), which explores the interplay between futures positioning and behavior seen in underlying cash markets.

Previously Published Research

Figure 36. Research Reports (since 2009)

Date	Research Theme	Report Link
20-Oct-25	Allocation	Searching for Alpha: What can Mutual Fund Flows tell us about Future Stock and Sector Returns?
29-Sep-25	Factor	What Works in Equity Markets: Misguided by Factor Betas
04-Sep-25	Rotation	What Works in Equity Markets: Style Factor Performance and High Macro Risk Environments
01-May-25	Positioning	What Works in Equity Markets: Does Crowding Outperformance Outweigh Crash Risk?
23-Apr-25	Rotation	Searching for Alpha – Style Rotation: Using Mutual Fund Flows to Predict Style Returns
05-Dec-24	Factor	Searching for Alpha – Stock Selection and Enhanced Growth Strategies with Option-Implied Volatility
29-Oct-24	Allocation	Searching for Alpha – Macro Sector Selection – Using Macro Regimes & News Sentiment to Forecast Sector Returns
27-Aug-24	Positioning	Measuring the Crowded Trade in Global Equities News Sentiment, Factor Crowding & Extended Coverage
20-Aug-24	Misc.	Global Risk Attribute Model: A Framework for Equity Macro Risk Analysis
10-Apr-24	Misc	Searching for Alpha – European Industry-Specific Return Drivers
11-Jan-24	Allocation	Searching for Alpha – Are PMIs Leading or Misleading?
04-Dec-23	Factor	Searching for Alpha: Leveraging Option Information to Improve Factor Performance
26-Sep-23	Allocation	Searching for Alpha: Macro Regimes and Systematic Equity Investing
10-Aug-23	Allocation	Searching for Alpha: Exposure to Macro via Equities
26-Jun-23	Positioning	Measuring the Crowded Trade in Global Equities: Introducing our Short Stock Crowding Model
16-May-23	Machine Learning	Searching for Alpha: From Machine Learning to Stock Screens – A Rulefit Model
24-Mar-23	Factor	Searching for Alpha: A Bottom-Up Approach to Evaluating Market Overbought/Oversold Conditions
20-Jan-23	Factor	What Works in Equity Markets: The Enduring Appeal of Income Investing
13-Jan-23	Factor	What Works in Equity Markets: Return on Equity, a different perspective through Revisions
07-Nov-22	Event	Searching for Alpha: Systematic M&A Strategies that Outperform Discretionary Event-Driven Approaches
26-Oct-22	Allocation	What Works in Equity Markets: Sector Selection – A Bottom-up, Factor Approach
09-Jun-22	Event	Searching for Alpha: M&A – Identifying Potential Takeover Targets
24-Feb-22	Event	What Works in Equity Markets: Buy Backs – Back in Vogue
26-Jul-21	Factor	What Works in Equity Markets: Risky Value vs. Quality Value Revisited
26-Jul-21	Machine Learning	Searching for Alpha: Practical Considerations in Building Neural Networks for Stock Selection
22-Jul-21	ESG	ESG Insights: Indexed ESG Funds – A Widespread Implementation Choice
22-Jun-21	Factor	Searching for Alpha: Go with the Stock Connect Flow, for a Sharpe of 4
18-Jun-21	Factor	Searching for Alpha: Overlaying Price Mo. and Short Interest to avoid drawdowns and improve returns
15-Jun-21	ESG	ESG Insights: ESG Fundamental Characteristics
13-Apr-21	ESG	ESG Insights: Following the ESG Herd: Has ESG become a Crowded Trade?
29-Mar-21	Machine Learning	Searching for Alpha: Pairs Trading: Applying Machine Learning to Pairs Trading
09-Mar-21	Positioning	Regime Modelling using Futures Positioning: Futures vs. Cash – A Distant but Meaningful Relationship
18-Feb-21	ESG	ESG Insights: The ESG ‘Premium’: How does ESG compare to other Factors?
01-Feb-21	Event	Searching for Alpha: Asia Earnings Surprise: Predicting Asia Earnings Surprises
14-Jan-21	ESG	ESG Insights: Where Machines do it Better: Inferred ESG Ratings Data
30-Oct-20	Factor	Searching for Alpha: China A Alpha – Smoothing Price Momentum
16-Oct-20	Factor	Under the Microscope: Overlapping Momentum
14-Sep-20	Positioning	Equity Markets Positioning Model: Introducing the EMP
11-Sep-20	Factor	Searching for Alpha: Combining ESG and Risk Premia Investment: A Double Screen Approach
08-Sep-20	Factor	Searching for Alpha: Factoring Short Interest: Measuring and Profiting from Information in Shorts
28-May-20	Machine Learning	Searching for Alpha: Machine Learning – SHAP Value as Factor Selection Criterion
28-Feb-20	Machine Learning	Searching for Alpha: Machine Learning: Leveraging Return Forecasts
21-Feb-20	Factor	Searching for Alpha: China A Alpha – Sector-rel. Value Is Powerful, Choose Sector Mappings Wisely
03-Oct-19	Machine Learning	Searching for Alpha: Machine Learning: Beyond Random Forest for Stock Selection
23-Sep-19	Event	Searching for Alpha: Earnings Surprise: Managing Expectations
05-Mar-19	Machine Learning	Searching For Alpha: Machine Learning: Interpreting Machine Learning Predictions
07-Feb-19	Misc	Searching for Alpha: GAAP vs. Non-GAAP: Which Earnings does the Market Price?
21-Nov-18	Positioning	Searching for Alpha: Style Crowding in Asia: Getting Ahead of the Crowd
17-Sep-18	Event	Searching for Alpha: Earnings Surprise: Using ML to Forecast Earnings Surprises & Returns
13-Sep-18	ESG	Searching for Alpha: The ESG Edge: ESG Investing – A Step Forward
03-Sep-18	Machine Learning	Searching For Alpha: Machine Learning: Interacting Machine Learning and Factors
03-May-18	Positioning	Measuring the Crowded Trade: Introduction to our Crowding Composite for individual stocks
14-Mar-18	Factor	Searching for Alpha: Profiting from Capex: Look To Capex Announcements
07-Sep-17	Rotation	Searching for Alpha: Tactical Style Rotation: Using Risk and Return to Manage Style Exposure
10-Mar-17	Misc	Searching for Alpha: Big Data: Navigating New Alternative Datasets
13-Feb-17	Factor	Searching for Alpha: Betting Against (Accurate) Beta
19-Sep-16	Factor	Searching for Alpha: Competitive Advantage: Survival of the Fittest
09-Sep-16	Factor	Searching for Alpha: Financial Strength Redux
14-Apr-16	Rotation	Searching for Alpha: Dynamic Style Weighting: Risk-Based Equity Style Allocation
04-Mar-16	Smart Beta	Long-Only Pure Style Portfolios: No Shorts Please
18-Feb-16	Factor	Industry Alpha Insights: Banks: One Size Does Not Fit All
21-Sep-15	Factor	Under the Microscope: Stock Momentum Conflation
15-Sep-15	Allocation	Searching for Alpha: Macro Moves Markets: Economic Data, Expectations and Market Pricing
06-Aug-15	Misc	Normalising for Style Factor Composites: Reviewing alternative solutions for constructing style composites
23-Mar-15	Rotation	Searching for Alpha: Style Timing: Style Performance, Trading Volumes and Investor Agreement
13-Mar-15	Misc	World Radar Screen: Refining Our Global Search for Alpha
18-Feb-15	Factor	Searching for Alpha: Networking with Analysts: Modelling Analyst Forecast Dependence
01-Oct-14	Smart Beta	The Rise of Low Risk Investing: Is It Getting Crowded Out There?
27-Mar-14	Factor	Under the Microscope: Five Innovations In Momentum Investing
07-Mar-14	Factor	Searching for Alpha: Timing Price Momentum: When Does Momentum Move?
27-Nov-13	Smart Beta	Equity Risk Premia Investing: A New Methodology for Monitoring Style Performance
23-Jul-13	Allocation	Stock Market Country Selection: Changes to a Well-Established Model

02-Jul-13	Factor	Searching For Alpha: Digging For Dividends: QUARI - QUality with A Reliable Income
24-Jun-13	Misc	Global Theme Machine: An Objective Way of Identifying Attractive Investment Themes
25-Mar-13	Factor	Searching for Alpha: Purifying Analyst Recommendations: Removing Beta to get to the Alpha
06-Nov-12	Factor	Searching for Alpha: Tangible Benefits of Intangibles: Brand, Respect & Intellectual Capital
09-Mar-12	Smart Beta	Low-Risk Portfolio Strategies: Sharpe Ratio Maximisation and Multi-Asset Applications
28-Feb-12	Rotation	Macro Risk and Style Rotation: A Guide Rather than a Prescription
14-Sep-11	Factor	Searching for Alpha: Accruals Volatility - A New Approach to Quality Investing
24-Aug-11	Allocation	Industry Alpha Insights: Four Approaches to Tactical Industry Selection
17-Mar-11	Misc	Industry Alpha Insights: Quantifying Industry-Specific Fundamentals
18-Nov-10	Smart Beta	Low-Risk Equity Portfolios: More than just Minimum Variance
15-Nov-10	Allocation	Under the Microscope: Measuring Systemic Risk - The Absorption Ratio
14-Jun-10	Factor	Under the Microscope: Optionality in Valuation
31-Mar-10	Event	Searching for Alpha: Earnings Surprise: Still Profiting from Surprises
29-Jan-10	Factor	Momentum in Japan: Looking at Price, Trading Values and Earnings
15-Oct-09	Rotation	Searching for Alpha: Style Rotation: Optimising Style Rotation Strategies

Source: Citi Research

Citi Quant Research Team

Figure 37. Citi Quantitative Research Teams (For Informational Purposes Only)

Global Quantitative Research

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