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Hedging under hegemony: domestic pathways to autonomy in Latin America

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The accelerating rivalry between the United States and China has unsettled Latin America's long-standing security hierarchy and opened limited, but tangible, space for strategic manoeuvre. This article asks why only a handful of Latin American and Caribbean governments succeed in *hedging*, deepening economic ties with Beijing while retaining Washington's security umbrella, whereas ostensibly similar neighbours remain locked in one-sided alignment. Bridging hierarchy theory and new-institutional economics, it argues that effective hedging under US regional *hegemony* depends on a domestic triad: robust state capacity, political stability, and resilient macro-economic fundamentals. A fuzzy-set Qualitative Comparative Analysis of 14 countries (2013–2023) operationalises a novel Hedging Index that blends trade and arms-procurement shares. Six equifinal pathways emerge; all true hedgers possess at least one strong institutional or economic pillar, while states deficient in both invariably default to alignment. The findings refine hedging theory for hierarchical regions and highlight the practical value of institutional upgrading for strategic autonomy.

KEYWORDS

hedging, regional hegemony, qualitative comparative analysis, Latin America, power competition

1 Introduction

The accelerating rivalry between Washington and Beijing has swept well beyond the western Pacific, forcing governments across Latin America and the Caribbean (LAC) to decide how, or whether, to recalibrate relationships that have long been asymmetrically anchored to the United States. Whereas the United States still supplies unsurpassed security guarantees and unrivalled agenda-setting power in hemispheric institutions, China now rivals or overtakes it as a trade and investment partner in much of the region. Faced with the promise of new markets and infrastructure finance on one flank and the prospect of strategic retaliation on the other, some LAC governments are experimenting with "hedging": they accept Chinese economic opportunities while quietly maintaining security, diplomatic or normative alignment with Washington. Others double-down on the old patron or, conversely, lean more openly towards Beijing. Why can ostensibly similar middle and small powers extract benefits from both great powers, while neighbours of comparable size and endowments settle for alignment? That variation, rather than the mere fact of LAC engagement with China, is the core puzzle this article seeks to explain.

Hedging theory, forged to decode Southeast Asian responses to a fluid balance of power, travels imperfectly to a hemisphere historically shaped by the Monroe Doctrine. In Southeast Asia no single external state has exercised uncontested primacy since 1945; secondary states there crafted intricate dual-track policies precisely because no hegemon could close the "exit option." By contrast, US dominance in the Caribbean Basin and the southern cone was once so entrenched that even mild gestures towards autonomy invited direct or covert sanction.

Beijing's economic surge therefore confronts LAC governments with a distinctive dilemma: can a strategy designed for regions of diffuse power be sustained under conditions of lingering, if eroding, hegemonic hierarchy? Answering that question matters not only for regional scholars; it also tests whether hedging is a genuinely portable concept or merely an Asia-centric artefact.

The literature is divided. Strategists laud hedging as "the middle path between balancing and bandwagoning," yet most empirical studies stop at typological description. Few attempt to measure hedging systematically, still fewer do so outside East Asia, and only an embryonic body of work, largely on Brazil, ventures into LAC terrain (Cook et al., 2024). This article moves the debate from metaphor to measurement. It adopts the common functional definition: hedging combines returns-maximisation through deep economic engagement with risk-management via selective security or diplomatic cooperation, all while preserving room to shift course if the structure of great-power competition changes (Sims et al., 2025). Such duality is attractive precisely because an outright alliance with either giant would compromise market access or escalate security exposure under conditions of power-transition uncertainty.

Our argument roots hedging capacity squarely in the quality of a country's domestic rule-making machinery. Drawing on new-institutional-economics insights, we contend that sustaining a deliberately ambiguous stance towards Washington and Beijing requires a bureaucracy able to knit together many ministries, enforce long-horizon contracts and cushion short-term distributional shocks. Robust rule-of-law, low corruption, effective administrative coordination and credible regulatory oversight keep the economic "leg" of hedging from sliding into capture, while preventing the security "leg" from generating costly mis-signals. Political stability and resilient macro-fundamentals (higher PPP-adjusted income, tame inflation, diversified export baskets, manageable debt) reinforce that institutional core by lowering the odds that crisis politics or external dependency will push a government to lurch towards a single patron. In short, hedging in LAC is possible only when sturdy institutions, predictable politics and shock-absorbing economies work in tandem.

We test this domestic-institutional claim with a fuzzy-set Qualitative Comparative Analysis (fsQCA) covering 14 LAC states that together account for roughly 85 per cent of the region's population. The outcome is a new Hedging Index, the fuzzy-set transformation of a composite share that blends each country's 2013-23 merchandise-trade proportions and SIPRI-recorded majorarms imports from the United States (plus its equipment ecosystem) and from China. Scores cluster near 0.50 when economic and security ties are broadly balanced; values drift towards 0 or 1 as alignment sets in. Three configurational conditions enter the truth table: State Capacity (five World-Bank governance indicators plus property-rights protection), Political Stability (WGI violence/instability scores) and Economic Fundamentals (PPP-income, trade-openness and inflationvolatility composites). Calibrated at the 85th/50th/15th percentiles, these sets allow fsQCA to reveal which mixes are minimally necessary or jointly sufficient for successful hedging, and which combinations reliably funnel states back into alignment.

The article makes four contributions. Empirically, it offers the first region-wide, reproducible measure of hedging in the Western Hemisphere and demonstrates that sustained dual-track strategies are indeed possible under regional hegemony, but only for governments endowed with robust domestic institutions.

Theoretically, it integrates an agency-centred account of state capacity with systemic logics of power transition, refining when and where hedging should travel beyond Southeast Asia. Practically, the findings inform policymakers seeking space for strategic autonomy without incurring punitive costs from either patron. Finally, by recasting Latin America's autonomy debates in a hedging-under-hegemony frame, we also offer a bridge to Asian scholarship, enabling cross-regional comparisons as China's rise both tightens constraints in Southeast Asia and incrementally expands policy space in Latin America.

The remainder proceeds as follows: the next section reviews the extant hedging literature and situates our domestic-institutional argument; subsequent sections detail data, calibration and fsQCA procedure, present the results, discuss their implications for both theory and policy, and conclude. To establish that our findings are not artefacts of modelling choices, the Supplementary material reports a comprehensive robustness suite: alternative consistency thresholds (Supplementary Table 12), outcome-calibration steepness (Supplementary **Tables** condition crispings 14-15),(Supplementary **Table** 16), necessity thresholds (Supplementary Table 17), and influential-case exclusions (Supplementary Table 18). In addition, we implement a longitudinal split (2013-2017; 2019-2023, with 2018 buffered) that re-computes the Hedging Index and re-calibrates all sets within each sub-period (Supplementary Tables 19-24). The robustness tests corroborate the full-period results; the split shows modest period-2 upticks consistent with post-2017 rivalry, but no change in the underlying causal architecture.

2 Literature review

2.1 What is hedging?

The concept of hedging emerged from the inadequacies of traditional international relations theory in explaining state behaviour during the post-Cold War transition. As the bipolar structure dissolved, scholars found that the conventional dichotomy between balancing and bandwagoning could not adequately capture the nuanced positioning strategies adopted by smaller powers navigating an increasingly complex multipolar environment. The rigid binary of balance of threat theory proved insufficient for understanding the sophisticated "in-between" strategies observed in regions such as Southeast Asia. Tessman and Wolfe (2011) argue that strategic hedging extends "the logic of traditional balance of power theory in order to account for a wider range of foreign policy behaviour" whilst maintaining emphasis on structural incentives.

This theoretical gap became pronounced as scholars observed states pursuing seemingly contradictory policies, simultaneously engaging economically with rising powers while maintaining security partnerships with established hegemons. Hedging emerged as a theoretical response, offering a framework for understanding how states could maintain strategic flexibility whilst managing uncertainties in periods of power transition. As Cheng-Chwee (2008) and Kuik (2021, 2022) defines it, hedging represents "insurance-seeking behaviour under situations of high uncertainty and high stakes, where a rational state avoids taking sides and pursues opposite measures vis-à-vis competing powers to have a fallback position."

The definitional contours of hedging centre on three core elements. Firstly, involves economic returns-maximisation through engagement with multiple great powers simultaneously, allowing states to capture cooperation benefits without exclusive dependence on any single partner. This economic dimension reflects what Wu (2024) describes as "an active pursuit of maximizing economic and security interests" rather than mere passive balancing. Unlike bandwagoning, hedging maintains diversified economic portfolios that reduce vulnerability to coercion whilst enabling states to leverage great power competition for enhanced benefits.

Secondly, hedging encompasses security risk-management strategies that avoid entrapment risks associated with formal military alliances whilst maintaining access to security partnerships. This involves what Jackson (2014) characterises as tactics including "bandwagoning, limited resistance and involvement" positioned as "an insurance position between the two simple tactics of balancing and bandwagoning." By maintaining limited security cooperation with multiple powers, hedging states can access security benefits whilst preserving strategic autonomy and avoiding formal alliance commitments.

Thirdly, preservation of strategic flexibility constitutes the overarching logic binding hedging's economic and security dimensions. This flexibility enables states to adjust their foreign policy orientation in response to changing power distributions without being constrained by rigid commitments. Wang (2021) notes that hedging allows countries to "maintain the balance of power in the region so as to lower the risks when they have chosen the side incorrectly," effectively functioning as "a strategy of deferred-bandwagoning."

2.2 Is hedging only Southeast Asian?

Southeast Asia's emergence as the paradigmatic case for hedging behaviour stems from the region's distinctive experience of diffuse power distribution and the absence of a single dominant regional hegemon. Jackson (2014) identifies this as reflecting Asia's complex network structure characterised by sensitivity, fluidity, and heterarchy that creates strong incentives for states to adopt hedging positions rather than definitive alignments. The region's colonial legacy and Cold War experience established patterns of navigating multiple external influences that would characterise contemporary approaches to US-China rivalry (Betancourt et al., 2025).

This historical continuity is demonstrated by Mendiolaza et al. (2022) through their analysis of nineteenth-century Siam, showing how through a flexible foreign policy of strategic hedging in which complementary and mutually counteracting actions were undertaken within a wider context of great power competition, Siam maintained independence as a sovereign state. The devastation of World War II, decolonisation, and Cold War ideological confrontations generated a strong regional preference for strategic autonomy that became institutionalised in Southeast Asian diplomatic practice.

Canonical empirical studies reveal a distinctive pattern of dual-track engagement combining economic integration with strategic diversification. Wang (2021) describes the phenomenon whereby ASEAN countries rely on China for economy but America for security, illustrating the sophisticated compartmentalisation characterising effective hedging strategies. Vietnam exemplifies this approach, as Wu (2024) demonstrates in

showing how Hanoi pursues maximizing economic and security interests through simultaneous engagement with both the United States and China whilst maintaining relative policy autonomy. This enables states to capture economic benefits from China's Belt and Road Initiative whilst accessing security guarantees from the United States.

Further, Indonesia demonstrates how larger regional powers adapt hedging logics to their enhanced capabilities. The complex interdependence among security, economic, and social-normative factors in Asia's network structure makes traditional strategies like balancing or bandwagoning impractical, encouraging states to maintain hedging positions (Jackson, 2014). Jakarta maintains extensive economic cooperation with China whilst preserving robust security partnerships with the United States and regional powers.

ASEAN multilateralism has proven crucial in sustaining hedging as a recurring theme. However, hedging sustainability faces increasing challenges as great power competition intensifies. The room for hedging available to smaller states shrinks as great powers become more competitive and attempt to balance against one another, suggesting hedging may become a luxury that is inversely related to the intensity of great power balancing (Korolev, 2016). The South China Sea disputes exemplify these pressures, where territorial conflicts make it increasingly difficult for states to maintain equidistance between Washington and Beijing.

2.3 Hedging under regional hegemony

Regional hegemony, understood as the sustained dominance of one state over others within a geographically bounded area through a combination of material capabilities and institutional arrangements, creates distinctive constraints on the foreign policy choices available to secondary states, small and middle powers (Lake, 2011). Unlike global hegemony, regional hierarchy operates through more intensive mechanisms of influence, including economic dependency, security guarantees, and institutional frameworks that channel smaller states' behaviour towards alignment with the dominant power's preferences. Within such hierarchical structures, traditional international relations theory suggests that secondary states face compressed policy space, with limited options beyond bandwagoning with the hegemon or engaging in costly balancing behaviour that risks retaliation.

The historical trajectory of United States hegemony in the Western Hemisphere exemplifies this dynamic of entrenched regional dominance. From the Monroe Doctrine of 1823 through the contemporary period, Washington has systematically constructed and maintained its dominant position through what neo-Gramscian scholars identify as multiple overlapping forms of power: structural, coercive, institutional, and ideological (Korolev, 2016). This hegemonic framework crystallised during the Cold War through interventionist policies that established "American hegemony in Latin America," supported by three foundational pillars: liberal culture, inter-American organisations, and United States military and economic capabilities (Nourigholamizadeh, 2020). The institutional architecture of the inter-American system, encompassing the Organisation of American States and related frameworks, emerged as a key mechanism for consolidating this dominance by promoting United States geopolitical priorities whilst constraining Latin American autonomy (O'Keefe, 2020).

Theoretical expectations derived from hierarchy theory suggest that such entrenched dominance should severely limit the capacity for hedging, which requires maintaining deliberate ambiguity, yet regional hegemony creates powerful incentives for bandwagoning through asymmetric dependence relationships and the threat of punishment for deviation. The logic of regional hierarchy should therefore compress the policy space available for hedging behaviour, particularly in domains where the hegemon maintains clear advantages.

Despite these theoretical expectations, contemporary Latin America presents a potentially deviant case that challenges conventional understandings of behaviour under regional hegemony. Evidence suggests that several Latin American states have successfully pursued dual-track diplomacy, engaging economically with China whilst maintaining security relationships with the United States (Gonzalez Pujol, 2024). This pattern of differentiated engagement has become particularly pronounced following China's emergence as a major economic partner through initiatives such as the Belt and Road Initiative, which has reshaped trade and investment patterns across the region (Gachúz Maya and Urdinez, 2022). Countries such as Chile and Peru have demonstrated relatively balanced approaches, leveraging economic opportunities with China whilst preserving traditional security alignments, contrasting with states like Mexico and Colombia that maintain closer overall alignment with United States preferences.

The persistence of United States regional dominance, evidenced by its continued role as the primary external security provider and its historical sphere of influence, makes this emergence of hedging behaviour theoretically puzzling (Grass, 2022). Recent scholarship has documented how the decline of United States engagement during certain periods, particularly the isolationist tendencies of the first Trump administration, created space for alternative relationships to develop (Grass, 2022). However, this temporal explanation proves insufficient, as hedging patterns have persisted across multiple United States administrations with varying levels of regional engagement.

Domestic-level explanations for variation in hedging capacity under regional hegemony have emerged as a significant focus in recent literature, though findings remain mixed and often inconclusive. Some scholars emphasise the role of developmental models and regime ideology, suggesting that leftist governments during Latin America's "Pink Tide" were more willing to challenge United States hegemony and diversify international partnerships (Korolev, 2016). Others highlight economic fundamentals, arguing that stronger economic positions enable states to resist hegemonic pressure and pursue more autonomous foreign policies (Santa-Cruz, 2019). Political stability has been identified as another crucial variable, with unstable political systems potentially lacking the capacity to maintain consistent dual-track approaches over time (Alvarez, 2021).

The choice of state capacity, political stability and economic fundamentals as causal conditions is rooted in the Foreign Policy Analysis (FPA) tradition, which "opens the black box" of the state and locates foreign-policy behaviour in domestic arenas of capability, legitimacy and economic constraint. Classic FPA work shows that bureaucratic coherence and professionalised agencies shape option-generation and policy coordination (Hermann, 1990; Hudson, 2006); leader survival expectations condition time horizons and risk tolerance (Fearon, 1998; Hagan, 1994); and macro-economic health circumscribes

the menu of feasible external strategies (Alden, 2016). Together, these three indicators capture the institutional, political and material dimensions most consistently linked to foreign-policy choice in the comparative literature, translating a rich body of micro-level insights into parsimonious, cross-national measures suitable for set-theoretic analysis. By anchoring the model in well-established FPA variables, the study moves beyond structural logics to a theoretically informed assessment of how domestic politics mediate hedging under regional hegemony.

It is fundamental to note that while we borrow the vocabulary of "hedging" from Asian security studies, the underlying impulse is hardly foreign to Latin America. A sustained regional conversation has long framed foreign policy as a search for autonomy within a hierarchical order, ranging from relational autonomy (Álvarez, 2015) to diversification for policy space and, more recently, Active Non-Alignment (ANA) in the face of US–China rivalry (Fortin et al., 2023). Read this way, hedging under hegemony is a measurement-oriented gloss on familiar LAC traditions: it updates relational autonomy (Russell and Tokatlian, 2003, 2013) with a dyadic security–economy metric; it echoes autonomy through diversification (Russell and Tokatlian, 2025; Vigevani and Cepaluni, 2007) by showing equifinal domestic routes to room for manoeuvre; and it resonates with the ANA agenda (Esteves and Coelho, 2025; Fortin et al., 2023; Heine, 2024; Lee et al., 2025) that advocates calibrated equidistance without disowning hemispheric constraints.

Recent regional work points in the same direction, treating strategic flexibility as a pragmatic goal rather than a doctrinal stance, whether in analyses of Latin America's options in a contested order (Bernal-Meza, 2024; Birle and Zilla, 2025), updates to the autonomy canon and Brazil's external posture (Acharya et al., 2021; Spektor, 2022; Spektor and Fasolin, 2018), reassessments of regional leadership and policy space (Rüland and Carrapatoso, 2022), or examinations of how US economic statecraft conditions latitude vis-à-vis China (Zelicovich and Yamin, 2024). Our contribution is to translate those Latin American ideas into a replicable, set-theoretic design that travels across cases and time, while keeping the normative core, autonomy under hierarchy, firmly in view.

Crucially, the framework is built to bridge debates across regions that now face converging constraints. As China's power rises, Southeast Asian governments will continue to operate in an international environment increasingly shaped by Beijing's economic gravity and technology reach; simultaneously, China's expanding footprint in Latin America, across trade, finance, infrastructure, and telecoms (Borquez et al., 2023; Jenkins, 2021; Lee and Sims, 2024; Sims et al., 2023), is widening policy space even under a persistent US security ceiling. These trajectories make Southeast Asia and Latin America look more alike in structural terms: stronger Chinese economic pull alongside enduring US strategic primacy. By formalising how domestic capacity, political stability and macrofundamentals open (or close) that space, "hedging under hegemony" offers a common analytical language for both regions. It lets researchers compare like with like, using a portable hedging metric and a configurational causal model, precisely as the rivalry reshapes the choices available to secondary states on both sides of the Pacific.

2.4 Measuring hedging: from concept to operational variable

Despite extensive theoretical elaboration, hedging remains significantly under-measured in empirical international relations

research, creating a substantial gap between conceptual sophistication and systematic analysis. Early attempts to operationalise hedging relied heavily on qualitative assessments that lacked clear metrics for cross-national comparison (Gonzalez Pujol, 2024). The absence of standardised measurement approaches has prevented the accumulation of comparable findings across different regional contexts, limiting theoretical advancement (Ciorciari, 2019).

Subsequent quantitative innovations have attempted to address these limitations through various measurement strategies. The pioneering work of Geeraerts and Salman (2016) developed one of the first composite index for measuring strategic hedging capability, incorporating economic indicators, military power metrics, and decision-making capacity. In that study, the authors demonstrated that successful hedging requires high performance across all three dimensions, with deficiencies in any component significantly reducing overall hedging capacity.

Alternative quantitative approaches have emerged through trade-to-arms ratios and alliance portfolio analyses, though these remain constrained by indicator selection bias and potential endogeneity problems (Kuik, 2016). The predominant focus on Southeast Asian cases has further limited comparative analysis, particularly regarding Latin American contexts where US regional hegemony creates distinctive strategic environments. The Latin American and Caribbean region has been particularly underserved by systematic hedging measurement, with existing scholarship predominantly focusing on individual country analyses rather than region-wide comparative frameworks. This gap is particularly striking given intensifying US-China competition in the region and the strategic opportunities this creates for hedging behaviour.

Consequently, the search for a single, portable yard-stick for hedging is misplaced, especially in a hemisphere where the United States continues to wield disproportionate leverage over trade preferences, financial lifelines and, above all, the regional security market (O'Keefe, 2020; Santa-Cruz, 2019). Under such hierarchy the "policy space" available to LAC governments is structurally narrower than that enjoyed by their Southeast Asian counterparts (Htwe, 2024): outright procurement of major Chinese weapons systems, for instance, is less a strategic choice than a foreclosed option. Treating hedging in absolute terms would therefore misinterpret constraint as voluntary alignment and compress most LAC cases towards the bandwagoning pole (Gonzalez Pujol, 2024). What matters analytically is not how far any Latin American state strays from Washington when benchmarked against Vietnam or Indonesia, but how much room it carves out relative to its own feasible set of moves within the hegemonic order (Nourigholamizadeh, 2020).

Adopting an ad-hoc, region-sensitive lens re-centres the inquiry on that intra-LAC variation. Even within a constrained range, countries differ markedly in how they sequence infrastructure deals, diversify export markets, manage security cooperation or deploy hedging rhetoric (Gachúz Maya and Urdinez, 2022; Kao, 2023), differences that reveal the institutional and political pathways through which greater strategic autonomy can be constructed (Gerstl, 2022). By treating hedging as a continuum bounded by US dominance yet still exhibiting meaningful gradations, the analysis can illuminate why some governments push the frontier of dual engagement while others retrench (Zelicovich and Yamin, 2024). Mapping those pathways is not only methodologically defensible; it is substantively vital for understanding how Latin American states

negotiate agency under hierarchy and how far that agency can stretch as the great-power rivalry deepens.

Accordingly, we focus the index on the two arenas where states make mutually visible choices with region-wide, annually audited data: bilateral goods trade (economic exposure) and major-arms acquisitions (security dependence). These map directly onto hedging's conceptual core, simultaneous returns-maximisation and risk-management, and allow transparent cross-national comparison over 2013–2023 (Ciorciari, 2019; Kuik, 2021). Other dimensions do matter, FDI, diplomatic signalling and voting, multilateral participation, but in a small-N regional panel they face well-known obstacles of coverage, comparability, attribution, and short-cycle volatility; we therefore treat them in this first measurement attempt as complementary evidence while keeping the outcome anchored in the cleanest behavioural dyad available.

Furthermore, because US suppliers dominate the regional arms market, we interpret scores relatively, as distance from a hegemonic baseline, rather than as an absolute statement of equidistance across all conceivable domains (Kirshner, 2007; O'Keefe, 2020). This "hegemonic-ceiling" reading preserves portability and keeps theory and measurement tightly linked: economic diversification can widen room for manoeuvre, but long-cycle security ties constrain how far most governments in LAC can move. Our choice also follows established good practice: major-arms transfers (SIPRI TIV) are widely used as a tractable, cross-national proxy for durable security ties because they are public, comparable, and annually updated, hence their prevalence in work on alignment/dependence and in network analyses of the global arms trade (Bove and Nisticò, 2014; Kinsella, 1998; Thurner et al., 2019).

2.4.1 How to measure?

Consequently, given that the literature still lacks standardised measurement approaches for "hedging" (Gerstl, 2022; Kuik, 2016, 2022), scholars converge on the most observable twin arenas where states must actually make mutually visible choices: security procurement and goods trade (Geeraerts and Salman, 2016). We therefore follow the field's de-facto standard and treat hedging as behavioural balance between two contending great powers, here, the US and China, across those two tracks (Gonzalez Pujol, 2024). On the military side we draw on SIPRI's Trend-Indicator Value (TIV) series, tallying major-arms imports from each patron (including US allies for the US) over a rolling window that smooths lump-sum deliveries yet captures enduring logistical dependence. On the economic side we track bilateral merchandise trade flows with each great power, using UN Comtrade data.

The logic is straightforward: arms transfers reveal the long-term security reliance a government signals to the outside world, while trade shares expose its day-to-day revenue and employment stakes (Gachúz Maya and Urdinez, 2022; Htwe, 2024). By expressing each country's China-to-total and US-to-total ratios in both domains and then comparing the two, we obtain a parsimonious but theory-consistent metric that flags genuine dual engagement (scores near parity) versus alignment (scores heavily weighted to one pole). This dyadic, two-leg approach keeps the measurement anchored to the essence of hedging, simultaneous pursuit of economic returns and security insurance from opposing patrons.

2.4.2 Pathways to hedging in LAC

Quantifying the military-trade balance tells us which LAC state hedges, band-wagon, or lean towards one patron (Koga, 2018), but it

cannot by itself explain why seemingly similar countries diverge along that spectrum. The pure logic of systemic pressure, China's market pull and Washington's security push, sets only the outer boundaries of choice, woving within those boundaries is mediated by domestic conditions (Putnam, 1988), which can be summarised as politics, institutions, and economic resilience (Moravcsik, 1997); without reference to those arenas the variation visible in the index remains a descriptive puzzle.

Building on set-theoretic analytical foundations, this research treats three national attributes as the decisive filters through which external incentives are translated into foreign-policy behaviour (Ragin, 2000, 2008; Schneider and Wagemann, 2013). State capacity anchors the argument. High-quality bureaucracies, credible legal systems and low corruption allow governments to coordinate the negotiations, contractual enforcement and strategic signalling that dual engagement requires (Lyu and Singh, 2023). Where capacity is weak, infrastructure deals with Beijing are prone to rent-seeking and defence understandings with Washington become muddled, eroding the very ambiguity that hedging depends on.

Political stability supplies the temporal horizon for credible signalling. When executive survival is reasonably secure and violent contestation rare, both great powers perceive commitments as durable and invest in long-term cooperation (Huntington, 1968; Przeworski et al., 2000). Frequent turnovers, mass-protest cycles or elite fractures shorten time horizons, making ambiguous positioning less believable and nudging governments towards clearer alignment to secure immediate benefits or avoid immediate penalties. Additionally, sound economic fundamentals, steady growth, manageable inflation, diversified exports and prudent debt ratios, provide the macro-buffer that lets a state withstand retaliatory tariffs, loan suspensions or investment slow-downs from either side (Reinhart and Rogoff, 2009; Sachs and Warner, 1995). Fragile fundamentals turn external shocks into domestic crises, forcing leaders to rely on whichever patron can offer the fastest relief and thereby collapsing the room for balanced engagement.

Finally, ideology and governing coalitions shape how these domestic endowments translate into actual choices. Our fsQCA treats them as mediators rather than core conditions: partisan alignments, cabinet coalitions, and leadership styles can tilt governments towards exploiting, or foregoing, the policy space that state capacity, stability, and macrofundamentals create. In LAC, conservative or market-oriented coalitions often privilege US security ties and trade regimes, while left or nationalist coalitions sometimes push diversification, yet both patterns vary with incentives and constraints at home (Gardini and Lambert, 2011; Neto and Malamud, 2015; Noone, 2019; Wehner & Thies, 2021a). This is consistent with the region's autonomy tradition (Russell and Tokatlian, 2003, 2013, 2025) and recent calls for Active Non-Alignment (Fortin et al., 2023): political projects influence whether governments use the room for manoeuvre unlocked by institutions and fundamentals, but they do not, on their own, generate that room. We return to this distinction in the Discussion when interpreting Mexico, Colombia, and Costa Rica.

2.5 The theoretical gap

Existing approaches thus leave the literature with three unresolved problems. First, qualitative typologies grounded in expert judgement or case vignettes capture the texture of hedging but cannot be scaled or replicated; without transparent thresholds they devolve into eclectic check-lists that travel poorly across regions (Gerstl, 2022). Second,

quantitative proxies, trade-to-arms ratios, alliance portfolios, UN voting-alignment scores, push measurement forward yet privilege single indicators, risking conceptual stretching and endogeneity when one dimension (usually economics) swamps the others (Geeraerts and Salman, 2016; Kuik, 2016, 2022). Third, and most consequential for this study, LAC remain almost untouched by systematic metrics. Beyond a handful of single-country contributions on Brazil, Chile or Panama, no region-wide dataset allows researchers to ask whether hedging survives under hegemonic hierarchy or to test domestic-institutional explanations at scale (Cook et al., 2024; Gonzalez Pujol, 2024).

The remainder of this article closes that empirical gap. It operationalises hedging as a balanced dual exposure, simultaneous, non-trivial economic and security ties to both the United States and China, and transforms that concept into a reproducible measurement that can be compared across LAC over time. By integrating this outcome with configurational measures of state capacity, political stability and macro-economic fundamentals, the analysis moves the debate from metaphor to measurement and from Southeast Asia to the Western Hemisphere. The following section details the data, calibration rules and fsQCA procedure that make this leap possible.

3 Research design

The analytical framework argued that hedging in LAC emerges from the intersection of multiple domestic capacities, political conditions, and macro-economic factors rather than any single driver. To operationalise this complex reality, we transform the conceptual notion of "balanced dual exposure" into a measurable Hedging Index. Drawing on UN Comtrade and SIPRI data, we calculate each country's proportional dependence on China versus the United States across trade flows and major arms imports. These ratios are then calibrated into fuzzy-set scores where 1 indicates strong US alignment, 0.5 represents balanced hedging with roughly equal ties to both powers, and 0 signifies China alignment. The calibration thresholds are anchored both to the empirical distribution observed across LAC cases and to theoretically grounded break-points, yielding a transparent and replicable measure that differentiates genuine hedging strategies from clear bandwagoning within the region's constrained strategic environment.

With the outcome firmly specified, the next task is to explain why only some governments occupy that middle ground. Here fsQCA offers decisive advantages over linear modelling: it treats causation as configurational and allows for multiple, equifinal pathways (Ragin, 2000; Rihoux and Ragin, 2009; Schneider and Wagemann, 2013). Three explanatory sets, state capacity, political stability, and economic fundamentals, are calibrated in parallel fashion and paired with the Hedging Index. The fsQCA algorithm then identifies which combinations are sufficient or necessary for hedging, revealing, for example, that high bureaucratic quality can offset moderate macrofragility, whereas countries with weaker institutions must couple strong fundamentals and durable stability to sustain dual engagement.

3.1 Hedging index in LAC

The hedging index is constructed from two straightforward inputs for 14 LAC countries selected based on data availability and the same temporal window, 2013–2023. Cuba and Venezuela, although they register merchandise trade and arms-transfer figures, are excluded:

sweeping US sanctions drive Venezuelan oil into opaque swap deals and black-market routes and leave Cuba with virtually no option but Chinese alignment, so including them would capture coercion-induced distortions rather than genuine strategic choice. This period captures the full arc of Xi Jinping's first and second presidential terms, representing a coherent phase of Chinese strategic expansion in Latin America that aligns with the formal launch of the China-CELAC Forum and the systematic institutionalisation of Beijing's regional engagement under the Belt and Road Initiative.

On the economic side we use annual merchandise-trade flows reported in UN Comtrade: Trade-US is each country's exports plus imports with the United States, Trade-CN the equivalent with the People's Republic of China. On the security side we rely on SIPRI's TIV for major-arms deliveries: Arms-US pools transfers from the United States and its principal equipment ecosystem, NATO members, Israel, Japan, South Korea, Australia and New Zealand, because most Latin-American militaries acquire second-hand US-standard platforms through those allies rather than directly from Washington; Arms-CN captures deliveries from China. Summing the yearly figures across 2013–2023 gives a total for each flow, avoiding distortions from single-year spikes in commodity prices or ship-set weapons packages while capturing the essential dynamics of great-power competition during Xi's consolidation of China's LAC strategy.

To turn these four numbers into a single orientation score we first express the US side as a proportion of the bilateral total in each arena:

TradeShare US = Trade US / (Trade US + Trade CN)

ArmsShare US = Arms US / (Arms US + Arms CN).

A denominator of zero is impossible for trade and exceedingly rare for arms; if it occurs we assign 0.01 to both terms so that the share is defined and records complete detachment from both patrons rather than producing missing data.

The two shares are then averaged with equal weight, economics and security carry identical conceptual importance in the definition of hedging, producing the raw index:

HedgingIndex = (TradeShare US + ArmsShare US)/2

By construction this number ranges from 1 (all trade and all arms sourced from the US/allies) through 0.5 (exactly even exposure, our empirical marker of hedging) to 0 (exclusive dependence on China). In practice, scores above about 0.66 signal pronounced US alignment, below about 0.33 pronounced Chinese alignment, and the band in between captures varying degrees of dual engagement. Because the metric is a simple share-of-total it can be recomputed for any new year, updated with quarterly customs releases, or re-weighted if future research judges that security should outrank trade. The resulting single figure for each country feeds directly into the fsQCA truth table as the outcome condition.

3.2 Fussy-set qualitative comparative analysis

FsQCA is the most appropriate tool for the task at hand because the theory regards hedging as a configurational, rather than additive, phenomenon (Ragin, 2008; Schneider and Wagemann, 2013). It assumes that the capacity of a LAC state to strike a balanced position between Washington and Beijing emerges only when several domestic attributes are jointly present and combined in particular ways; in other words, the causal logic is inherently set-theoretic (Ragin, 2000). FsQCA translates that logic into algebraic language, allowing us to treat each case as a member, fully, partly, or not at all, of sets that represent meaningful conditions (Ragin, 2008). The method also accommodates causal asymmetry, recognising that the absence of hedging need not follow the inverse of the recipe that produces it, and it copes gracefully with the small-N universe of 15 observable cases (Schneider and Wagemann, 2013).

Classic fsQCA principles guide the analysis (Rihoux and Ragin, 2009). Conjunctural causation directs attention to how conditions work together; equifinality alerts us to the possibility that different combinations of those conditions yield the same outcome; and the limited-diversity problem reminds us that, in real data, only a subset of logically possible configurations ever materialises (Ragin, 2008; Schneider and Wagemann, 2013). By relying on consistency and coverage scores, fsQCA evaluates whether a given configuration is sufficient or necessary, thereby illuminating discrete pathways by which states secure the strategic flexibility characteristic of hedging (Ragin, 2000).

The outcome set, labelled HEDGING, captures the degree to which a country's economic and security ties with the US and China are simultaneously deep and balanced. Its metric foundation is the Hedging Index introduced earlier; here that continuous index is converted into fuzzy-set membership scores so that cases clustered near perfect parity are coded as full members of the outcome set, whereas clear alignment with either patron yields non-membership (Fiss, 2011). Three causal sets enter the truth table. State capacity, drawing on composite governance indicators, summarises bureaucratic coherence and legal reliability; political stability reflects the durability of executive tenure and the absence of large-scale violence; and economic fundamentals pool information on income level, export diversification and inflation volatility.

Each causal set is calibrated with the direct method (Mendel and Korjani, 2018). Full membership thresholds are anchored at roughly the 85th percentile of the regional distribution, crossover points at the median, and full non-membership at about the fifteenth percentile (Schneider and Rohlfing, 2013). Indicators that run in the "bad is high" direction are first inverted. The outcome is calibrated symmetrically around the theoretical ideal of perfect balance: membership approaches one as the index falls within about five percentage points of parity and declines towards zero as exposure tilts decisively towards either pole.

Once every metric score has been translated into fuzzy numbers, the cases are entered into a truth table (Rihoux and Ragin, 2009). Because the universe is small, no empirical row is dropped; the frequency threshold is set to a single case, while the consistency criterion for sufficiency is fixed at 0.80 and the threshold for necessity tests at 0.90 (Schneider and Wagemann, 2013). After the table is sorted by descending consistency, three standard minimisations are produced (Rihoux and Ragin, 2009). The complex solution respects all observed configurations, the parsimonious solution incorporates all permissible simplifying assumptions, and the intermediate solution accepts only counterfactuals that align with substantive expectations, specifically, that higher state capacity, greater political stability and stronger economic fundamentals should facilitate, rather than obstruct, hedging. Robustness checks accompany every run (Oana and

Schneider, 2024). The calibration anchors are tightened and relaxed to ensure findings are not artefacts of percentile choice; alternative weightings of trade and arms in the Hedging Index test the sensitivity of the outcome to domain emphasis.

Additionally, because hedging is plausibly slow-moving, we complement the decade-long design with a pre-registered temporal split that replicates the full procedure in two sub-periods: 2013–2017 and 2019–2023, with 2018 buffered to avoid transitional noise. For each sub-period we recompute the Hedging Index from the same trade/arms inputs, re-calibrate SC, PS, and EF via the direct method using period-specific anchors, and re-run fsQCA under the same frequency and consistency conventions as in the main design. This split is conceived as a robustness check of design choices and calibration, not as a separate explanatory model; it tests temporal stability of both the outcome and the causal architecture. Full details and tables are reported in the Supplementary Tables 19–24.

3.3 Data

3.3.1 Hedging data

We build the Hedging Index from one economic and one security series that are publicly available, methodologically transparent, and updated every year (Table 1).

We operationalise the security leg via SIPRI's major-arms TIV because it is the only region-wide, annually updated series that (a) assigns comparable values across platforms, (b) spans our full window, and (c) is publicly auditable. This choice prioritises observability and comparability, but it omits quieter channels of cooperation, training and education, operational exercises and port calls, intelligence

liaison, police/border-security assistance, and cyber/telecom vendor penetration. These channels are conceptually relevant and can be incorporated as data coverage improves. Similar large-N approaches use SIPRI TIV for the same reasons (Bove and Nisticò, 2014; Kinsella, 1998; Thurner et al., 2019).

3.3.2 FsQCA data

The configurational analysis pairs the Hedging Index with three domestic conditions, each drawn from publicly available, crossnational datasets and averaged over the same 2013-2023 window to keep temporal exposure consistent. For State Capacity, that meant pulling the 10-year series for Rule of Law, Control of Corruption, Government Effectiveness, Regulatory Quality (from World Bank WGI) and Property-Rights protection (from TheGlobalEconomy), computing each indicator's arithmetic mean over the period, then standardising those five means (z-scores) and taking their unweighted average. For Political Stability, we averaged the yearly WGI Political Stability & Absence of Violence/Terrorism scores and rescaled the result linearly to the unit interval. And for Economic Fundamentals, we averaged three components: (1) the 10-year mean of GDP pc (PPP) and (2) of the trade-openness ratio, each min-max-scaled to [0.1], plus (3) one minus the min-max-scaled standard deviation of annual CPI inflation, so that lower volatility becomes higher stability. These composite, pre-calibration scores preserve the full variation across 15 countries while summarising a decade of experience into a single number (Table 2).

Condition calibration transforms each raw score into a fuzzy-set membership value between 0 and 1, using the direct method. For each set, we identify three benchmark points in the regional distribution: the 15th percentile marks "full non-membership" (fuzzy = 0), the 50th

TABLE 1 Hedging data summary.

Track	Variable	Source	Why this source?
Economy	Bilateral merchandise trade (exports + imports) with the United States and with the People's Republic of China	UN Comtrade (annual HS- reported values, downloaded Jan 2024)	Widest coverage of countries and years • Harmonised definitions permit direct cross-national comparison • Captures the revenue and employment stakes that make China–US rivalry tangible
Security	Major-arms imports, Trend-Indicator Value (TIV), from (a) the United States + its core equipment ecosystem* and (b) China	SIPRI Arms-Transfer Database (release March 2024)	Only open dataset that assigns a standardised value to every weapons delivery • TIV converts disparate systems to a single unit, letting us aggregate across years and platforms • Long timeseries makes it possible to smooth one-off spikes

[&]quot;US equipment ecosystem" = NATO members, Israel, Japan, South Korea, Australia and New Zealand; most Latin-American forces acquire US-standard gear via these partners rather than directly from Washington.

TABLE 2 fsQCA data summary.

Set	Concept & indicators (all 2013–23 averages)	Source(s)	Construction (pre-calibration)
Outcome	Hedging – single score already defined in section 3.3.1	UN Comtrade; SIPRI TIV	[TradeShare-US + ArmsShare- US]/2 \rightarrow 1 = US alignment; 0.5 = balanced hedge; 0 = China alignment
State capacity	Rule of Law, Control of Corruption, Government Effectiveness, Regulatory Quality, Property-Rights protection	World Bank WGI; TheGlobalEconomy	Arithmetic mean of five z-standardised series
Political stability	Political Stability & Absence of Violence/Terrorism	World Bank WGI	Direct WGI score (rescaled 0-1)
Economic fundamentals	GDP pc (PPP), Trade-openness ratio, CPI-inflation sd	World Bank; IMF; TheGlobalEconomy	Scale GDP pc & openness to 0–1; compute 1 – (scaled inflation SD); then average those three values.

percentile is the "crossover" (fuzzy = 0.5), and the 85th percentile denotes "full membership" (fuzzy = 1). Values falling between these anchors are mapped onto the 0-1 scale via linear interpolation. This approach preserves the relative standing of each country within the LAC region while giving clear qualitative meaning to low, medium, and high scores.

The calibration of the hedging outcome into a fuzzy set required transforming the raw Hedging Index scores into membership values that capture the theoretical essence of balanced engagement between the United States and China. The raw Hedging Index, constructed from the average of trade and arms procurement shares with each great power, produces scores ranging from 0 to 1, where 1.0 indicates complete US alignment, 0.0 represents complete China alignment, and 0.5 signifies perfect hedging balance. However, for fuzzy-set analysis, the outcome must reflect degree of membership in the set of "successful hedgers" rather than simple directional alignment.

This requires recognising that countries scoring at the extremes (0.9+ or 0.1–) are pursuing clear alignment strategies rather than hedging, regardless of which power they favour. True hedging behaviour is characterised by maintaining roughly equidistant relationships with both powers, meaning countries closest to the 0.5 midpoint exhibit the strongest hedging characteristics. Therefore, the calibration must assign highest fuzzy membership to countries near perfect balance while penalizing deviation in either direction. The mathematical calibration employed an exponential decay function that translates proximity to the 0.5 balance point into fuzzy-set membership scores. Specifically, for each country, the distance from perfect hedging was calculated as:

Distance = |Raw Score - 0.5|.

This distance was then converted to membership using the formula:

Hedging Membership =
$$\exp(-k \times distance^2)$$
.

Where k = 8 serves as a steepness parameter controlling how rapidly membership declines with distance from balance.

This approach ensures that Panama, with a raw score of 0.490 (distance = 0.010), receives near-perfect hedging membership (0.999), while México, with a raw score of 0.954 (distance = 0.454), receives very low hedging membership (0.192) despite having a "high" raw score. The exponential function creates smooth gradations while maintaining clear qualitative thresholds: countries within 0.1 points of perfect balance achieve hedging memberships above 0.9, those within 0.2 points score above 0.6, while countries deviating more than 0.3 points from balance fall below 0.5 membership. This calibration method aligns with hedging theory's emphasis on strategic ambiguity and balanced engagement, ensuring that the fuzzy outcome properly identifies countries maintaining genuine dual-track strategies rather than those pursuing disguised alignment with either great power.

Once every country's outcome and condition scores are calibrated, they populate the fsQCA truth table. Given our small-N design (14 countries), we set the frequency threshold to one case, ensuring all observed configurations are considered. We then assess sufficiency using a consistency cutoff of 0.80, identifying which combinations of state capacity, political stability, and economic fundamentals most reliably produce high membership in the Hedging set. This calibration

strategy balances analytical rigor with interpretive transparency, making the results both robust and easily reproducible.

3.4 Hypotheses

*H*1: Latin-American countries that simultaneously exhibit high state capacity and strong economic fundamentals are highly likely to achieve hedging; countries lacking either of those two attributes almost never do.

Building on the autonomy literature, robust bureaucratic capacity expands a state's policy space vis-à-vis external powers (Besley and Persson, 2009; Fukuyama, 2004), while solid macro-economic fundamentals provide the fiscal room needed to absorb great-power pressure (Kirshner, 2007). Hedging studies further show that only when both institutional and economic pillars are in place can secondary states sustain an equidistant stance between rival hegemons (Medeiros, 2005).

*H*2: When one condition is weak, a compensating strength in another condition can still deliver hedging.

This proposition draws on configurational and equifinality theory, which holds that different combinations of causal conditions can yield the same outcome (Rihoux and Ragin, 2009; Schneider and Rohlfing, 2013). In the Latin-American foreign-policy record, cases such as Brazil and Argentina illustrate how either administrative capability or political stability can substitute for economic shortcomings to maintain strategic balance (Gardini and Lambert, 2011), echoing the compensatory logic of hedging observed in other regions (Kuik, 2022).

4 Results

4.1 Hedging measurement

Table 3 reveals just how steep the regional gradient towards Washington remains. Twelve of the 14 cases sit above the 0.66 cut-off, signalling a "hegemonic ceiling" on policy autonomy (Kirshner, 2007). Mexico, Honduras and Nicaragua cluster at the very top of the spectrum (Index > 0.94), pairing overwhelming US trade shares with complete military dependence. Even the commodity giants, Brazil, Chile and Peru, whose exports are now majority-China, stay in the "weak-to-moderate US alignment" band because their hard-security links are still monopolised by the United States. The pattern confirms Medeiros' claim that defence relationships weigh more heavily than commerce when great-power preferences collide (Medeiros, 2005). A longitudinal split (2013-2017; 2019–2023, 2018 buffered) yields the same qualitative picture: Period 2 shows small, directionally plausible increases in hedging membership, but the causal structure is unchanged (Supplementary Tables 19–24).

Only two states breach the 0.33-0.66 "hedging window" in Table 3, and they do so via markedly different formulas. Panama (Index = 0.490) approximates textbook balance: a near-even trade split and an absence of meaningful arms deals with either power. Uruguay (Index = 0.654) practises what Kuik calls "asymmetric hedging," leveraging China's

TABLE 3 Hedging index.

Country	Hedging index	Country	Hedging index	Country	Hedging index
Mexico	0.954	Costa Rica	0.901	Chile	0.691
Honduras	0.951	Colombia	0.840	Brazil	0.691
Nicaragua	0.946	Ecuador	0.834	Uruguay	0.654
Dominican Republic	0.921	Argentina	0.746	Panama	0.490
El Salvador	0.921	Peru	0.698		

Source: Author's hedging index 2013-2023 for LAC based on bilateral trade data (UN Comtrade) and arms transfers data (SIPRI TIV).

TABLE 4 Truth table.

SC	PS	EF	N	Countries	Avg raw score	Avg hedging	Outcome
0	0	0	2	Nicaragua, Honduras	0.948	0.200	US-aligned
0	0	1	1	Ecuador	0.834	0.410	Moderate hedging
0	1	0	1	Argentina	0.746	0.616	Moderate hedging
0	1	1	1	El Salvador	0.921	0.242	US-aligned
1	0	0	1	Brasil	0.691	0.747	Moderate hedging
1	0	1	3	Colombia, México, Perú	0.831	0.440	Mixed
1	1	1	5	Chile, Panama, D. Republic, Uruguay, Costa Rica	0.731	0.618	Mixed

SC, State Capacity; PS, Political Stability; EF, Economic Fundamentals; N, Number of countries.

TABLE 5 Sufficiency analysis (consistency \geq 0.80).

Path	Configuration	Description	Consistency	Coverage
1	~SC ~ PSEF	Low State Capacity + Low Political Stability + High Economic Fundamentals	0.897	0.213
2	~SCPS~EF	Low State Capacity + High Political Stability + Low Economic Fundamentals	1.000	0.164
3	~SCPSEF	Low State Capacity + High Political Stability + High Economic Fundamentals	1.000	0.185
4	SC ~ PS~EF	High State Capacity + Low Political Stability + Low Economic Fundamentals	0.924	0.234
5	SC ~ PSEF	High State Capacity + Low Political Stability + High Economic Fundamentals	0.847	0.232
6	SC <i>PS</i> EF	High State Capacity + High Political Stability + High Economic Fundamentals	0.884	0.397

agricultural demand while anchoring its security posture in long-standing US ties. That Uruguay still sits 0.15 points above the perfect 0.5 midpoint highlights the structural difficulty of straddling the divide once defence dependencies are entrenched, an observation echoed in Gardini's account of Latin America's constrained strategic bandwidth (Gardini and Lambert, 2011). Taken together, the table suggests that while economic diversification can loosen Washington's grip, genuine equidistance remains the exception rather than the rule.

4.2 FsQCA

Using fsQCA 3.0 and opting for the complex solution, the variant that makes no logical simplifications and therefore adheres most closely to the observed data (Rihoux and Ragin, 2009; Schneider and Rohlfing, 2013). Honduras, for instance, still hosts the US Joint Task Force Bravo at Soto Cano Air Base and receives almost all Foreign Military Financing from Washington, locking it into the "0 0 0" alignment row. Table 4 confirms that outright alignment, not

hedging, remains the regional default. Six of the seven rows with a modal US-aligned outcome combine low or mixed institutional scores and together cover almost half of the cases. By contrast, the only row delivering unambiguous hedging (consistency > 0.80) is the configuration that contains Brazil (SC = 1, PS = 0, EF = 0); Brasília's ability to negotiate Chinese investment in the Porto do Açu while simultaneously conducting AMAZONLOG joint exercises with the US Army illustrates how one strong bureaucratic pillar can offset political volatility. The mixed rows reinforce the point that similar endowments do not guarantee similar strategies, a pattern also documented in other hierarchical settings. This illustrates the well-known QCA insight that "one powerful condition can compensate for the absence of others" (Oana and Schneider, 2024).

Table 5 formalises this compensatory logic. Six paths clear the 0.80 sufficiency threshold, and fully four of them involve either limited state capacity or weak economic fundamentals. Paths 1-3 show that states with fragile bureaucracies (~SC) can still hedge when strong economic fundamentals are paired with either political volatility or stability, echoing the broader view that secondary powers often blend

different instruments to offset vulnerability (Kuik, 2016). Uruguay epitomises Path 1: its world-class beef-export boom to China funds fiscal buffers that compensate for modest bureaucratic reach, while it maintains long-standing US defence cooperation through regular UNITAS naval drills. Paths 4–5 indicate that robust state capacity (SC) can counter-weight lacklustre economic fundamentals. Chile's Dirección de Presupuestos and Economic Development Agency (CORFO) underpin such bureaucratic heft, allowing Santiago to juggle Chinese lithium deals and US F-16 upgrades despite middling growth in recent years. The canonical high-high-high recipe (Path 6) is present, but it covers barely 40 per cent of successful hedgers, tempering any notion of an "institutional golden ticket."

Solution formula:

$$Hedging = \sim SC \sim PSEF + \sim SCPS \sim EF + \sim SCPSEF + SC \sim PS \sim EF + SC \sim PSEF + SCPSEF.$$

Balanced engagement can be achieved through any of six distinct pathways.

Table 6 pushes the analysis a step further: high state capacity (0.816) and robust economic fundamentals (0.835) stop just short of

the 0.90 necessity threshold, making them near-necessary but not indispensable. In practical terms, no country reaches the ≥ 0.70 hedging-membership mark while posting low scores on both SC and EF, yet the reverse is not true, Panama leverages the Colón Container Port concession to China while keeping the US. Southern Command at hand through the 1977 Torrijos–Carter Treaties, Panama and Uruguay clear the hedging bar with only middling scores on one of the two dimensions. This near-necessity fits Panke's (2012) argument that fiscal and administrative muscle widen a state's policy space, while still leaving room for deft diplomacy to tip the balance.

Taking Tables 4–10 together, a consistent picture emerges: hedging in Latin America is both rare and configurational. Only five of the 14 countries, those listed in Table 7 (True Hedgers), clear the ≥ 0.70 membership threshold, and they do so via three distinct institutional "recipes." Panama's simultaneous hosting of the 2023 US–Panama "Panamax" naval exercise and inauguration of China-funded cruise-terminal facilities at Amador Causeway exemplifies the ideal-type hedger (Path 6). Panama exemplifies the ideal-type hedger (Path 6), Uruguay pursues an economic-first route (Path 1), and Brazil demonstrates that bureaucratic heft can outweigh political turmoil (Path 4). The remaining states fall progressively down the ladder: Table 8 records the two moderate hedgers that hover below the

TABLE 6 Necessity analysis.

Condition	Necessity Score	Interpretation
SC (High State Capacity)	0.816	Almost necessary
~SC (Low State Capacity)	0.476	Not necessary
PS (High Political Stability)	0.725	Not necessary
~PS (Low Political Stability)	0.590	Not necessary
EF (High Economic Fundamentals)	0.835	Almost necessary
~EF (Low Economic Fundamentals)	0.645	Not necessary

TABLE 7 True hedgers.

Country	Raw score	Hedging membership	State capacity	Political stability	Economic fundamentals
Panama	0.490	0.999	0.606	0.818	0.842
Uruguay	0.654	0.827	1.000	1.000	0.830
Brasil	0.691	0.747	0.765	0.273	0.372
Chile	0.691	0.747	1.000	0.855	0.692
Perú	0.698	0.731	0.700	0.250	0.534

TABLE 8 Moderate hedgers.

Country	Raw score	Hedging membership	State capacity	Political stability	Economic fundamentals
Argentina	0.746	0.616	0.248	0.632	0.273
Ecuador	0.834	0.410	0.163	0.482	0.692

TABLE 9 US-leaning

Country	Raw score	Hedging membership	State capacity	Political stability	Economic fundamentals
Colombia	0.840	0.397	0.840	0.000	0.501

TABLE 10 US-aligned.

Country	Raw score	Hedging membership	State capacity	Political stability	Economic fundamentals
Costa Rica	0.901	0.276	0.941	1.000	0.667
El Salvador	0.921	0.242	0.418	0.507	0.502
D. Republic	0.921	0.242	0.508	0.767	0.566
Nicaragua	0.946	0.204	0.015	0.280	0.386
Honduras	0.951	0.196	0.166	0.046	0.369
México	0.954	0.192	0.757	0.000	0.602

benchmark, Table 9 isolates Colombia, whose 2018 accession to NATO's "global partner" status tilted it towards Washington despite booming Chinese coal purchases, as a US-leaning outlier, and Table 10 groups the outright US-aligned cases whose institutional mixes, however strong in parts, prove insufficient for balanced engagement. Altogether, the tiered pattern across Tables 7–10 corroborates what a strong body of literature has already stated (Clark and Rosales, 2023; Gardini and Lambert, 2011; Neto and Malamud, 2015; Vigevani and Cepaluni, 2007; Wehner & Thies, 2021b), that LAC retain limited but genuine room for manoeuvre under US hegemony, provided they can stitch together the right combination of domestic assets.

4.3 Longitudinal split

Given the fact hedging is a slow-moving, state-mobilising foreignpolicy behaviour, our primary lens is the full period (2013-2023; Cheng-Chwee, 2024; Cheng-Chwee, 2008). To probe temporal stability and potential non-stationarity around the 2017-2018 inflection in US-China competition, we also implemented a longitudinal split: Period 1 = 2013-2017 and Period 2 = 2019-2023, with 2018 buffered to avoid transitional noise (Bown, 2021). For each sub-period we recompute the Hedging Index from the same trade/arms inputs (UN Comtrade; SIPRI Yearbook), re-calibrate SC, PS, and EF using the same direct-method approach with period-specific anchors (Ragin, 2008; Schneider and Wagemann, 2013), and re-run fsQCA under the same frequency and consistency conventions as in the main design (Fiss, 2011; Rihoux and Ragin, 2009). Coverage matches the 14-country sample used in the core analysis. Period 1 yields a more restrictive picture, no true hedgers, five moderate hedgers, and a single sufficient configuration (SCPSEF) clearing the 0.80 bar, whereas Period 2 shows modest movement towards balance (five true and three moderate hedgers) but no configuration meeting the 0.80 sufficiency threshold owing to greater within-row dispersion. However, we interpret the split as a robustness exercise: the decade remains the inferential baseline, while the sub-periods show that late-decade dynamics nudge memberships without altering the causal architecture.

Two considerations help explain the limited differences between the two sub-periods. First, hedging takes time to build: it depends on bureaucratic coordination, contractual credibility and macro-buffers, all of which evolve more slowly than electoral cycles (Mahoney and Thelen, 2009). In the LAC context, frequent policy discontinuities after changes in administration further dampen short-term movement, even in foreign policy. Second, the rivalry itself is recent. Our sampling, corresponding to Xi Jinping's first periods, also deliberately brackets the onset of the trade war, 5 years before and 5 years after

2018, so Period 1 precedes the need to hedge in any systematic way, and Period 2 captures only the first half-decade of the current competitive stage (Jisi and Ran, 2019). Consequently, we should not expect large shifts between Period 1 and Period 2; rather, we observe small, directionally plausible adjustments in Period 2 as hedging begins to materialise. The full 11-year window therefore remains the most informative view of a long-term pattern, providing a granular yet stable baseline against which subsequent years can be compared.

5 Discussion

5.1 Hedging as relative manoeuvre under a hegemonic ceiling

Heavy military dependence on the United States frames the strategic landscape: between 2013 and 2023, Latin America obtained more than 99 per cent of its major weapons from Washington or allied suppliers (Table 3). Complete equidistance from the two great powers is therefore implausible, yet the fsQCA results confirm that governments still secure graduated margins of autonomy. Those margins are scarce: only five of the 14 countries, just over one-third of the sample, satisfy the \geq 0.70 hedging-membership criterion predicted by H1 (Table 7). Uruguay's score of 0.654 sits within that select group, Brazil's 0.691 marks the lower edge, and Argentina's 0.746 falls short. Each numerical step along the continuum reshapes bargaining leverage when Beijing or Washington seeks concessions. In the Western Hemisphere hedging must thus be read relatively: incremental movement away from the hegemonic baseline signals meaningful room for manoeuvre even if no state crosses into outright Chinese alignment. In addition, because hedging is a slow-moving, state-capacity-intensive policy, the full decade provides the appropriate signal-to-noise ratio; the sub-period replication showcased in the Supplementary material shows only modest late-decade movement without altering the pathways, reinforcing the case for long-horizon measurement.

5.2 Configurational routes to autonomy

Table 5 details six sufficient pathways and Table 11 distils their pivotal ingredients. The near-necessity scores of 0.816 for state capacity and 0.835 for economic fundamentals substantiate H1: without strength in at least one of these arenas meaningful hedging does not materialise. Yet the data also speak directly to H2. Robust bureaucracy can compensate for weak macro-fundamentals, as Brazil's SC \sim PS \sim EF configuration shows, while first-rate macro stability can

TABLE 11 Pathway summary.

Near-necessary set	Necessity score	Role in pathways
High state capacity (SC)	0.816	Core in Paths 4–6; compensates for weak EF
Strong economic fundamentals (EF)	0.835	Core in Paths 1, 3 & 5; compensates for weak SC

offset institutional thinness, as Uruguay's ~ SCPSEF recipe demonstrates. Political stability neither guarantees nor blocks hedging, but it enhances consistency when paired with another strong dimension. The result is an equifinal landscape in which several distinct mixes of domestic assets unlock dual engagement, vindicating the compensatory logic that H2 anticipates.

5.3 Degrees of autonomy within hegemony

Because the regional security order is hierarchical, the analytical benchmark for success is not perfect parity but rather the distance a government can travel from the hegemonic baseline without provoking prohibitive costs. Panama represents the outer edge of that spectrum. A near-even trade split combined with the absence of meaningful arms imports from either patron yields a hedging-membership of 0.999, despite only middling state-capacity scores. Uruguay achieves a lower but still notable degree of autonomy by exploiting China's demand for agricultural exports while retaining total US defence reliance. Brazil, with superior bureaucracy but weaker fundamentals, remains just outside the hedging band. These gradations demonstrate that hedging in Latin America is not a single formula but a family of strategies tailored to particular domestic strengths, again reflecting the compensatory pathways foreseen in H2.

5.4 The Costa Rica puzzle and the limits of structure

Costa Rica complicates a purely structural reading. Its 1-1-1 institutional configuration places it squarely within the ideal SCPSEF pathway suggested by H1, yet its hedging-membership is only 0.276. San José's 2007 diplomatic switch from Taipei to Beijing, followed by swift ratification of CAFTA with the United States and a US-funded radar upgrade for counter-narcotics patrols, shows how ideological affinity with Washington, a demilitarised security identity and elite scepticism towards Chinese finance appear to outweigh the structural permissiveness that its institutions provide. The anomaly shows that while domestic structures enable hedging, policy intention and societal preferences can still override structural readiness. Configurational models map the envelope of feasible strategies, but leadership choices determine where within that envelope a state finally lands, a boundary condition both hypotheses must acknowledge.

5.5 Mexico and Colombia: alignment under constraint

Mexico and Colombia are pivotal for regional order, yet both sit outside the hedging set in ways that track our causal story. Mexico posts the highest raw score (0.954) and a very low hedging-membership (0.192). Deep, rules-based economic integration under USMCA and long-standing US security reliance (training, assistance, operational cooperation) narrow the scope for dual-track signalling, even as trade with China grows at the margin. The longitudinal split reported in the Supplementary Tables 19–24 shows virtually no movement between 2013–2017 and 2019–2023 ($\Delta=-0.003$; see Supplementary Table 19), underscoring how embedded arrangements in both the economic and security legs lock in alignment.

Colombia is more variegated but remains US-leaning (raw 0.840; membership 0.397). Intensive security cooperation—formalised through its "global partner" status, anchors the defence leg, while commodity cycles and episodic political turns introduce limited movement on the economic side. In the split-period results (Supplementary Table 19), Colombia drifts modestly towards balance ($\Delta=-0.040$) in Period 2, a change that is consistent with regional dynamics but insufficient to alter its strategic classification. Together, the pair illustrate a boundary condition in our findings: even with strong state capacity and solid macro-fundamentals, heavy, institutionalised ties to Washington can crowd out sustained ambiguity unless leaders invest in compensating moves, moves that are costlier under a hegemonic ceiling.

5.6 Implications for theory and practice

The Latin-American evidence refines hedging theory in several respects. First, hierarchy constrains but does not eliminate dual engagement; autonomy is achieved incrementally inside the hegemonic order, confirming the conditional nature of H1. Second, equifinal and compensatory logics dominate: high capacity can substitute for weak fundamentals and vice versa, and no country hedges when both dimensions are weak, validating H2. Third, policy agency remains decisive. Costa Rica's deviation illustrates that even the most favourable structural mix does not compel hedging. For practitioners the lesson is straightforward: upgrading bureaucratic coherence or macro-economic resilience broadens strategic options, but capitalising on that latitude requires deliberate political will; and incremental shifts, rather than dramatic realignments, offer the most realistic path to enhanced autonomy under an enduring US security umbrella.

6 Limitations

One of the key limitations of this study concerns temporal dynamics and scope. Hedging is a long-term, state-mobilising strategy, and short slices can mistake cyclical noise for structural change. Because the US–China rivalry is comparatively recent, we bracketed the trade-war break by looking at 5 years before and 5 years after 2018 and buffered 2018 itself. This design is a prudent first step and the split (Supplementary Tables 19–24) shows modest late-decade movement without altering the causal architecture. As the rivalry matures, future work should lengthen the timeframe and use rolling-window or panel

fsQCA, along with event-centred designs and process-tracing to link specific reforms and shocks to shifts along the hedging scale.

A second weakness is the narrow security proxy. We anchor the security leg in SIPRI's major-arms series because it travels cleanly across countries and years, but it inevitably under-captures intelligence liaison, training and education, operational exercises and port calls, police/border-security assistance, and cybersecurity/telecom vendor penetration. These channels matter for influence and may shift specific cases at the margin. A natural next step is to layer a Security-Cooperation Panel onto the index using publicly available sources. Our expectation is that including these will refine magnitudes rather than reverse the configurational results and will likely render the present estimates conservative for US-leaning cases.

Another weakness lies in how our outcome proxy is intentionally narrow. By anchoring the economic leg in goods trade and the security leg in major-arms transfers, the index is transparent and reproducible, but it underweights services, FDI and finance, diplomatic engagement, multilateral activity, and quieter security channels (training, exercises, intelligence liaison, cyber cooperation). Given the structural skew of the arms market towards US suppliers, we interpret results relatively, as degrees of manoeuvre under a hegemonic ceiling. As public, comparable series mature, future work can layer these additional channels onto the index, without changing the core finding that domestic capacity and macro-resilience enable movement towards the hedging corridor inside a hierarchical order.

A further limitation stems from case selection. We keep the core set of 14 countries for comparability and data quality, and we exclude heavily sanctioned cases to avoid coercion-induced distortions. This choice keeps inference clean but narrows external validity. A dedicated design that reintegrates outliers and sanction-constrained states could clarify how coercion reshapes the menu of hedging options under regional hierarchy. Methodologically, fsQCA is built to identify configurations that are sufficient or necessary; it does not estimate marginal effects or dynamic adjustments between periods. We mitigate this with a structured robustness suite (Supplementary Tables 12–18), but a fuller dynamic picture will require complementary tools, panel or rolling-window QCA, synthetic controls for pivotal cases, or mixed-methods designs that pair set-theoretic results with within-case process evidence. Finally, all set-theoretic work depends on calibration. We use the direct method with period-specific anchors and show that results are robust to reasonable shifts, yet membership scores near thresholds are, by definition, sensitive. Longer panels will allow data-driven anchors and additional checks on borderline cases.

7 Conclusion

This article set out to answer a deceptively simple question: can Latin American and Caribbean governments hedge between the United States and China while operating inside a long-standing US security hierarchy, and if so, what domestic combinations make that delicate act possible? By converting hedging from an evocative metaphor into a reproducible fuzzy-set index, and by pairing that outcome with configurational measures of state capacity, political stability and economic fundamentals, the study moves the debate from description to systematic explanation. Three findings stand out.

First, hedging in the Western Hemisphere is possible but exceptional. Only five of the 14 cases analysed reach a hedging-membership score above 0.70, and merely two, Panama and Uruguay, fall inside the stricter 0.33–0.66 band of the raw index. The overwhelming weight of US arms transfers (more than 99 per cent of regional TIV) compresses the spectrum yet does not erase it; governments can still edge away from the hegemon, but the path is narrow and easily reversed. This pattern answers the portability question that motivates the study: hedging can travel beyond Southeast Asia, but it arrives in attenuated, highly calibrated form.

Second, domestic endowments condition the size of that manoeuvring space. High state capacity and strong economic fundamentals approach necessity, each scoring just above 0.80 in the necessity test, yet neither pillar alone guarantees success. The fsQCA uncovers six equifinal recipes, only two of which contain both endowments in their positive form. Brazil hedges despite weak economics because its capable bureaucracy can coordinate diplomacy and manage risk; Uruguay demonstrates how robust institutions paired with first-rate macro-stability ~SCPSEF can sustain balanced engagement even under total US defence reliance. These compensatory pathways validate Hypothesis 2 and refine the autonomy literature by showing that institutional and economic strengths work as substitutable assets under hierarchy.

Third, policy intention and societal preference still matter. Costa Rica, with strong scores on all three structural dimensions, nonetheless aligns firmly with Washington. The case reminds us that hedging is not mechanically produced by favourable structures; it is chosen. Ideological affinity, normative identity and elite world-views can override the incentives that structure provides, preserving room for agency even in an otherwise hierarchical environment. In doing so Costa Rica sets a boundary condition for the two hypotheses: structure enables but never compels.

These findings contribute to three strands of scholarship. For hedging theory, the Western-Hemisphere evidence demonstrates that hierarchy compresses, but does not eliminate, equidistant strategies. The concept is therefore portable but context-dependent: its empirical markers must be scaled to the intensity of regional primacy. For international-institutional research, the study shows that state capacity retains explanatory power even where formal alliance commitments are absent; robust bureaucracies help governments navigate overlapping and sometimes conflicting economic and security logics. Finally, for the broader debate on secondary-state agency, the article offers a middle path between structural pessimism and liberal voluntarism by specifying the exact domestic mixes that expand or shrink policy space under hegemony.

Policy implications follow directly. Governments that wish to diversify great-power ties should focus on building either bureaucratic coherence or macro-economic resilience, ideally both, but one can compensate for the absence of the other. Upgrading these pillars is politically difficult and fiscally expensive, yet the pay-off is clear: each incremental move towards the hedging midpoint enlarges bargaining leverage without necessitating a provocative break with Washington. For the United States, recognising that small shifts matter may encourage more calibrated responses: punitive measures aimed at minimal diversification could prove counter-productive, hardening the very behaviour they seek to deter. For China, the analysis suggests that commercial engagement alone is insufficient; without complementary moves in the security domain, moves that currently face strong structural obstacles, Beijing's influence will remain capped.

The study also advances methodology. By fusing a novel hedging index with fsQCA, it demonstrates how set-theoretic tools can extract

causal leverage from small-N regional samples that defeat conventional regression techniques. The calibration rules and codebook are publicly available, allowing other scholars to extend the dataset through time or replicate the approach in Africa, the Middle East or Eastern Europe, where other regional hegemons condition policy space.

Limitations remain. The analysis excludes Venezuela and Cuba for reasons of data reliability and coercion-induced distortion; incorporating sanctioned or pariah states could reveal alternative pathways, perhaps coercive rather than compensatory, to alignment or hedging. The security metric focuses on hard-ware procurement and therefore misses newer domains such as cyber-intrusion detection, police training or intelligence cooperation, areas where Chinese influence might register before it shows up in major-arms transfers. Finally, the study is cross-sectional. A longitudinal extension could track whether institutional reforms or macro-economic shocks translate into upward or downward movement along the hedging scale, and whether Washington's own policy oscillations raise or lower the ceiling on autonomy.

Despite these caveats, the core message is robust. Hedging in the Western Hemisphere is a game of inches, not miles. The fsQCA shows exactly which domestic combinations buy those inches, and it reveals how rare and hard-won they are. Latin American states that accumulate administrative depth or macro-economic buffers can loosen Washington's grip just enough to diversify, but only if political leaders decide to invest that newly won latitude in strategic ambiguity. Where both pillars are absent, or where leaders choose not to exploit them, the gravitational pull of the hegemon reasserts itself. Hedging, then, is neither a universal default nor a futile dream; it is a narrow corridor, navigable by a handful of well-equipped governments and always subject to recalibration as the great-power rivalry intensifies.

Future research should walk that corridor in both directions. On the empirical side, scholars can test whether the same compensatory logic holds in other hierarchical regions or in non-material domains such as technology standards and public-health cooperation. On the theoretical side, integrating public-opinion data and elite-level discourse analysis could illuminate why structurally similar societies reach different foreign-policy decisions. As the United States and China deepen their contest, the strategic value of such fine-grained understanding will only grow. Knowing not just that hedging occurs but how it is built, and by whom, offers a clearer map of the geopolitical possibilities that lie ahead for Latin America and the wider Global South.

Data availability statement

The original contributions presented in the study are included in the article/Supplementary material, further inquiries can be directed to the corresponding author.

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JS: Data curation, Writing – review & editing, Methodology, Conceptualization, Software, Writing – original draft, Investigation, Project administration, Formal analysis, Validation. BL: Software, Investigation, Methodology, Data curation, Writing – original draft, Writing – review & editing, Conceptualization.

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Supplementary material

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