Editorial

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Techno-nationalism, strategic trade policies and geopolitical rivalry have begun to reshape globalisation in structural ways. Scholars have described this process as the rise of 'bifurcated governance' and 'value chain decoupling', where the world economy fractures into competing blocs and innovation networks are forced to reconfigure around new political fault lines (Petricevic and Teece, 2019). This transformation challenges long-held assumptions about seamless global integration and has prompted calls for fresh theoretical tools to understand how multinational enterprises (MNEs) can continue to profit from innovation under conditions of volatility, uncertainty, complexity and ambiguity (Buckley, 2020).

Latecomer economies still rely on openness to global knowledge flows to close technological gaps. Yet these flows now operate under new constraints, with export controls, sanctions regimes and extraterritorial regulations shaping who can collaborate with whom, and on what terms (Narula, 2012). High-tech firms sit at the centre of this tension. They benefit from cross-border networks, but they are also the primary targets of policy interventions that seek to localise strategic technologies or restrict access to critical components. This special issue asks a simple but demanding question: how can high-tech firms – especially from emerging economies – continue to profit from innovation when the global system on which they relied is structurally fragmenting?

This special issue situates high-tech innovation at the intersection of these dynamics. It builds directly on work that theorises this new geopolitical-economic order and its implications for strategic sectors and multinational enterprises (Petricevic and Teece, 2019; Buckley, 2020). The editors emphasise that bifurcation is not only a geopolitical story. It is also a question of how firms build resilience, sustain exploratory innovation and manage new forms of risk in their R&D and global value chain (GVC) strategies (Li, 2020). We also see that this bifurcation is coming to a more strong intent than our earlier observation for this issue and not stopping in near future.

The 11 papers collected in this issue respond to this agenda in a strikingly multi-level way. Together they trace a line from trade and policy shocks, through mission-oriented and catch-up innovation policies, to firm-level capabilities in artificial intelligence, green innovation, digital transformation and knowledge management. The result is a rich social commentary on how high-tech firms in emerging markets, especially China, navigate a world that is both globally interdependent and politically divided.

Chen et al. (2025) focus on the period after 2018, when the US-China trade conflict intensified and talk of decoupling moved from speculation to policy. Drawing on behavioural theory of the firm, they argue that firms respond to such shocks not only through rational expectations of future payoffs, but also through performance feedback

relative to aspiration levels. Firms that move from under-performing peers before the shock to outperforming them afterwards experience what the authors call a 'social performance feedback leap'. This favourable surprise recalibrates managerial beliefs and makes risk-taking in innovation more acceptable even when the macro environment is hostile (Chen et al., 2025). The paper thus complements studies that treat political uncertainty as a brake on R&D by showing that behavioural mechanisms can generate pockets of increased innovation under pressure.

Chen et al. (2025) show that the same shock can be interpreted as an opportunity by firms that gain confidence, and Fu et al. (2025) explain why even confident firms cannot ignore the structure of uncertainty itself. Examining vertical trade policy uncertainty from a real options perspective, they find an inverted U-shaped relationship between uncertainty and innovation output. Moderate uncertainty can open a window of opportunity by inducing firms to invest in flexible capabilities, while very high uncertainty turns the environment into a minefield that discourages irreversible innovation commitments. Supply chain structure matters a great deal. Concentrated supply chains weaken the positive side of this relationship, while stable supply chains strengthen it, suggesting that firms must balance concentration and stability when designing resilient innovation strategies in volatile policy environments (Fu et al., 2025).

Cai et al. (2025) move the discussion from external conditions to managerial perceptions. Using panel data on Chinese listed manufacturing firms, they show that managers' perceptions of US-China trade uncertainty are negatively associated with exploratory innovation. Yet this effect is not deterministic. It is mitigated when top management teams have stronger R&D backgrounds, when firms enjoy greater financial slack and when industries are more competitive (Cai et al., 2025). Taken together with Chen et al. (2025) and Fu et al. (2025), this study highlights that the impact of bifurcation depends on how managers interpret shocks and on whether firms possess the buffers and skills needed to keep exploring under pressure.

Zhou et al. (2025) then extend the macro-shock narrative beyond innovation intensity to the geography of internationalisation. They turn to the US Entity List sanctions regime and its impact on Chinese multinational enterprises, showing that when a cooperating partner is added to the Entity List, associated firms respond by increasing the dispersion of their foreign direct investment locations and by expanding the average geographic distance of their overseas operations (Zhou et al., 2025). This shift suggests that firms attempt to diversify risk spatially, seeking new host countries or regions less exposed to US policy instruments. The moderating role of overseas executive backgrounds and resource endowments again confirms that capabilities and leadership experience shape strategic choices under bifurcated governance.

Building on this sanctions perspective, Sun et al. (2025) shift attention from directly targeted firms to their domestic peers. Using data on 3,590 Chinese high-tech A-share firms and drawing on contagion effect theory, they show that sanctions on focal firms spur higher innovation inputs among peers but reduce their innovation outputs. Government subsidies and industry competition strengthen the response to input, whereas greater supplier concentration dampens both increases in input and declines in output. This indicates that the effects of sanctions reverberate through innovation systems well beyond the firms that are formally listed as targets.

The special issue also examines how governments in emerging economies can design innovation policies that respond to bifurcation without retreating into technological

isolation. Geng et al. (2025) conceptualise catch-up-oriented innovation policy as a systematic variant of mission-oriented policy tailored to latecomer countries. They identify five key policy instruments: entity cultivation, capacity building, market creation, platform construction and institutional strategy. Using firm-level data, they find that this policy portfolio positively affects enterprises' technological capabilities, especially when industrial competition is intense and firms have strong resource application capabilities (Geng et al., 2025).

If macro shocks and policy design set the stage, the next group of studies asks what happens inside firms and networks as they attempt to adapt. Under bifurcation, firms must respond to geopolitical shocks and climate pressures at the same time; they cannot afford to treat green, digital and international strategies as separate domains. Yin et al. (2025) address this intersection directly by studying AI adoption and green innovation among over three thousand listed Chinese manufacturing firms. They show that adopting AI technologies significantly enhances both the efficiency and persistence of green innovation. The effect on efficiency is stronger in industries characterised by higher dynamism, which suggests that AI tools help firms process complex information and adapt quickly when both competitive and regulatory conditions change (Yin et al., 2025). Interestingly, the gains in green innovation differ between high-tech and low-tech manufacturing, with high-tech industries benefiting more in terms of efficiency and low-tech industries seeing stronger persistence effects. This pattern aligns with broader observations that firms use digital technologies to build dynamic capabilities that support sustainable development under global uncertainty (Li, 2020).

While Yin et al. (2025) focus on AI as a specific technology, Song et al. (2025) consider digital transformation more generally. Using survey data and a knowledge-based view, they show that digital transformation improves innovation speed and quality, but through different knowledge processes. Knowledge creation mediates the relation between digital transformation and innovation speed, while knowledge sharing mediates the relation with innovation quality (Song et al., 2025). Taken together, these studies suggest that digital tools are not a simple input. Their impact depends on whether firms mobilise them to generate new knowledge internally, to share and recombine knowledge across organisational boundaries, or to do both at once.

The focus then shifts from internal capabilities to the relational channels through which knowledge travels in a fractured global economy. Xiang et al. (2025) analyse innovation spillovers between MNEs and local firms in emerging markets. Using data on MNE operations in China, they show that inter-organisational dependence structures can inhibit knowledge spillovers, especially when local suppliers or buyers become overly dependent on a single MNE partner. However, longer relationship duration and higher transaction value can strengthen spillovers, particularly for buyers who leverage stable relationships to secure more technological knowledge and follow-on innovation (Xiang et al., 2025). This nuanced picture supports the idea that knowledge flows in global value chains are not automatic, but shaped by power imbalances and relational governance structures (Petricevic and Teece, 2019).

Complementing this focus on dyadic ties, Zang et al. (2025) turn to non-core firms embedded in innovation ecosystems. Using survey data from 505 Chinese enterprises, they distinguish technological innovation embedding and business value-based embedding and show that both enhance the innovation performance of non-core firms. Organisational resilience partly mediates, and ecosystem maturity amplifies, these effects, demonstrating how peripheral firms without strong internal resources can

upgrade by strategically embedding in mature ecosystems and leveraging shared technological and business infrastructures.

Where Xiang et al. and Zang et al. underline how knowledge and capabilities circulate across organisational and ecosystem boundaries, Zhang and Ying (2025) remind us that knowledge can also be deliberately withheld, especially in politically charged settings. Studying multinational construction megaprojects, they analyse knowledge hiding through conservation of resources theory and a multidimensional view of territoriality, showing that psychological ownership drives both territorial defending, which increases knowledge hiding, and territorial expanding, which can reduce it. Perceived organisational politics strengthen the former pathway and weaken the latter, tilting behaviour towards defensive knowledge hoarding, undermining collaboration and innovation in megaprojects and highlighting the need to curb political interference, redesign roles and foster more supportive organisational climates.

Overall, the studies in this special issue not only advance academic debates about global value chains, techno-nationalism and dynamic capabilities, but also speak directly to practitioners and policymakers who must make decisions in real time as the rules of the game shift. By connecting macro-level shocks, meso-level policy and ecosystem design, and micro-level capabilities and human agency, the 11 contributions move beyond simple narratives of deglobalisation or resilience. They show that innovation continues under new constraints, with new winners and losers and with new ethical and political stakes. In a world where bifurcation is likely to persist, the insights assembled here offer both a warning and a set of tools for those seeking to steer innovation towards more inclusive and sustainable outcomes.

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