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Can CPEC 2.0 Generate New Quality Productive Forces? A Conditional Conversion Framework for Infrastructure, Industrial Upgrading, and High-Quality Development in Pakistan

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Abstract: This study examines whether the second phase of the China-Pakistan Economic Corridor (CPEC 2.0) can convert infrastructure assets accumulated under CPEC 1.0 into productivity-enhancing development capabilities in Pakistan. It translates the Chinese policy concept of new quality productive forces into a comparative analytical framework centered on technological innovation, industrial upgrading, green transition, digital connectivity, and inclusive development. The study adopts a theory-guided qualitative case design, combining structured reading of policy documents, mechanism tracing, and indicator-based triangulation. The argument is conditional: CPEC 2.0 marks a strategic and discursive shift from infrastructure accumulation to productive conversion, but this shift is not itself an outcome. Special economic zones, digital connectivity, lower-carbon energy systems, agricultural modernization, and Gwadar-linked logistics are plausible conversion mechanisms. Their developmental effects depend on Pakistan's absorptive capacity, energy-sector reform, institutional coordination, security governance, regulatory predictability, and the ability of domestic firms and local communities to capture spillovers. The study contributes to Belt and Road Initiative and development-corridor scholarship by reframing CPEC as a contested process of capability formation rather than merely a geopolitical corridor, a debt-financed infrastructure program, or a list of bilateral projects.

Keywords: CPEC 2.0; new quality productive forces; high-quality development; industrial upgrading; Belt and Road Initiative

I. Introduction

The China-Pakistan Economic Corridor (CPEC) has entered a second phase in which the central development question is no longer whether Pakistan can build infrastructure. Roads, power plants, port facilities, and communication links remain important, but they are enabling assets rather than final development outcomes. The more difficult question is whether those assets can be converted into industrial productivity, technological capability, green transition, export competitiveness, and inclusive local development. This distinction matters because many development corridors generate physical connectivity without producing durable structural transformation. Infrastructure can reduce transaction costs, but it does not automatically create firms, skills, supplier networks, export capacity, or social legitimacy. CPEC 1.0 was dominated by infrastructure accumulation. Its early portfolio responded to Pakistan's shortages in electricity, transport connectivity, and port-related logistics. CPEC 2.0 is officially framed around five interlinked corridors: growth, innovation, green development, livelihood, and regional connectivity [1], [2]. Recent China-Pakistan statements also emphasize high-quality CPEC development, Gwadar as a regional connectivity hub, and the inclusion of third-party participation [3]. The policy vocabulary has therefore shifted from construction and connectivity toward productivity, innovation, sustainability, and inclusion. Yet policy vocabulary does not prove development performance. The analytical challenge is to determine whether this shift can become a measurable process of productive conversion.

This study uses the concept of new quality productive forces as an analytical lens for this problem. The concept has emerged in Chinese policy discourse to describe innovation-led, advanced, high-efficiency, and high-quality productivity [4]. For an international academic audience, however, it cannot be used as a self-evident doctrine. It must be translated into categories that are comparable with literatures on development corridors, global value chains, industrial policy, special economic zones, absorptive capacity, green transition, and digital development. In this article, new quality productive forces refer to the capacity of an economy to generate productivity-enhancing growth through technological innovation, industrial upgrading, green transition, digital connectivity, and inclusive development outcomes.

CPEC 2.0 is discursively framed as a transition toward high-quality development, but Pakistan's macroeconomic, institutional, energy, security, and local-governance conditions may prevent this transition from materializing. This creates a gap between corridor ambition and productive conversion. The paper therefore asks: under what institutional and

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sectoral conditions can CPEC 2.0 convert first-phase infrastructure assets into productivity-enhancing industrial and technological capabilities in Pakistan?

The study addresses four subsidiary questions. First, how has the development logic shifted from CPEC 1.0 to CPEC 2.0? Second, how can new quality productive forces be translated into a rigorous and non-doctrinal framework for analyzing an international development corridor? Third, through which sectoral mechanisms are new quality productive forces most likely to emerge under CPEC 2.0? Fourth, which structural constraints may prevent infrastructure assets from becoming high-quality development outcomes?

The study makes three contributions. First, it reframes CPEC 2.0 as a capability-formation problem rather than only a geopolitical, debt, or infrastructure-completion problem. Second, it translates new quality productive forces into a framework that can be examined with comparative development concepts and observable indicators. Third, it integrates opportunities and constraints into a single conversion model, avoiding both celebratory policy narratives and one-dimensional risk narratives.

II. Literature Review

A first stream of literature approaches CPEC as a flagship project of the Belt and Road Initiative. This literature emphasizes transport connectivity, energy supply, port development, and the strategic link between China's western region and the Arabian Sea. The CPEC Long-Term Plan identified Gwadar, energy, transport infrastructure, industrial cooperation, and social-sector cooperation as major components of the corridor [5]. This work is valuable because Pakistan's growth has long been constrained by electricity shortages, weak logistics, and underdeveloped trade infrastructure. The first phase of CPEC responded to real bottlenecks. The limitation of infrastructure-centered analysis is that it can treat infrastructure as if it were development itself. International experience with development corridors suggests otherwise. A road can reduce travel time without creating an export cluster. A power plant can increase installed capacity without delivering affordable electricity to firms. A port can be strategically significant without generating cargo, processing industries, or local employment. This study therefore treats infrastructure as a necessary but insufficient condition for structural transformation.

A second stream analyzes CPEC through geopolitics, debt sustainability, security, and local contestation. It examines China-Pakistan strategic relations, India’s objections, the role of Gwadar, the Indian Ocean, and the implications of Chinese financing for Pakistan's fiscal and external position. Security has become especially salient because repeated attacks on Chinese personnel and CPEC-linked sites have made worker protection a central bilateral concern [3], [6]. Local grievances in Balochistan and Gwadar have also raised questions about who bears the social and security costs of corridor development and who receives its benefits. This literature corrects overly optimistic narratives, but it can understate the microeconomic mechanisms through which industrial upgrading may or may not occur. Debt, security, and local contestation are not external to productive transformation. They shape the cost of capital, electricity prices, investor confidence, the mobility of engineers, the willingness of firms to enter special economic zones, and the legitimacy of the corridor among local populations.

A third body of scholarship concerns special economic zones, global value chains, industrial upgrading, and absorptive capacity. This literature is crucial for CPEC 2.0 because it treats infrastructure as a platform whose impact depends on firm-level linkages, logistics efficiency, skills, regulatory quality, and export-market integration. SEZs do not generate development merely because land is designated or tax incentives are offered. Their success depends on anchor investors, supplier development, labor training, reliable energy, customs facilitation, and links to domestic firms [7], [8]. GVC research similarly emphasizes that participation in trade networks is not equivalent to upgrading. Firms may enter low-value assembly or processing activities without moving into design, branding, technology, higher-value inputs, or knowledge-intensive services [9], [10]. Absorptive-capacity theory adds that foreign investment produces spillovers only when domestic firms and workers possess prior capabilities that allow them to recognize, assimilate, and apply external knowledge [11]. These insights are directly relevant to CPEC 2.0: Chinese investment may create opportunities, but Pakistan's domestic institutions, firms, financial systems, and workers must be able to capture them.

The concepts of high-quality development and new quality productive forces offer a way to evaluate the corridor beyond investment volume. High-quality development implies growth that is more productive, innovative, green, resilient, and inclusive. New quality productive forces can be treated as a productive-capacity concept: they emerge when technological innovation, advanced industrial organization, green transition, digital infrastructure, and human capital jointly raise the quality and efficiency of economic activity. Applied to CPEC 2.0, the relevant outcomes are not only capital inflows or project completion, but industrial productivity, export upgrading, technological spillovers, digital services, lower-carbon and more reliable energy, agricultural modernization, and local welfare.

The existing literature leaves three gaps. First, many CPEC studies remain concentrated on geopolitics, debt, security, or basic infrastructure, while devoting less attention to productivity, industrial upgrading, and technological spillovers. Second, CPEC is often treated as a single continuous project rather than as a staged process in which CPEC 2.0 has a distinct development logic. Third, existing work rarely integrates infrastructure assets, SEZs, digitalization, green transition, agriculture, Gwadar, macroeconomic constraints, and local inclusion into a single mechanism-based framework. This study fills that gap by treating CPEC 2.0 as a system of productive conversion under institutional and political-economy constraints.

III. Conceptual Framework

For cross-national analysis, new quality productive forces must be translated into analytical language that can be compared with established development theories. In this article, the concept is decomposed into five dimensions: technological innovation, industrial upgrading, green transition, digital connectivity, and inclusive development. Each dimension is linked to observable CPEC 2.0 mechanisms and possible indicators. This prevents the concept from functioning as a slogan and turns it into an evaluative framework.

The framework distinguishes between potential, mechanism, and outcome. Potential refers to the existence of policy commitments, signed agreements, infrastructure assets, financing pledges, or designated zones. Mechanism refers to the process through which these inputs alter productive organization, such as supplier linkages, skills formation, digital platforms, green-energy reliability, logistics integration, or local procurement. Outcome refers to measurable changes in productivity, exports, value added, employment quality, emissions intensity, digital services, rural productivity, and local welfare. Confusing these levels is a common weakness in corridor analysis. A memorandum of understanding is potential, not outcome. A completed road is an asset, not necessarily transformation. A functioning supplier network or export-oriented cluster is closer to a productive outcome.

The model is a three-stage sequence: CPEC 1.0 infrastructure assets, CPEC 2.0 productive-conversion mechanisms, and high-quality development outcomes. Infrastructure assets include roads, power generation, port facilities, and communication links. Productive-conversion mechanisms include SEZs, digital infrastructure, green energy systems, agricultural modernization, and Gwadar-linked logistics. Outcomes include productivity, exports, technological spillovers, employment quality, green transition, and inclusive local benefits. However, these stages are mediated by absorptive capacity, energy-sector reform, security governance, institutional coordination, and local inclusion.

Four propositions guide the analysis. Proposition 1: CPEC 2.0 can generate new quality productive forces only if infrastructure connectivity is linked to industrial upgrading, export capacity, and firm-level capability formation. Proposition 2: SEZs are the main institutional platform for converting infrastructure assets into productive capacity, but their success depends on anchor firms, supplier linkages, skills, reliable energy, and regulatory coordination. Proposition 3: digital and green corridors can improve the quality of CPEC-led development only under stable regulation, trusted data governance, affordable energy, and sufficient local absorptive capacity. Proposition 4: security risk, energy-sector debt, weak governance, limited SME finance, and local exclusion can interrupt the conversion process and reduce CPEC 2.0 to a portfolio of underembedded projects.

These propositions do not assume success. They specify the conditions under which CPEC 2.0 is more or less likely to generate new quality productive forces. The framework therefore treats development outcomes as conditional, relational, and measurable rather than automatic.

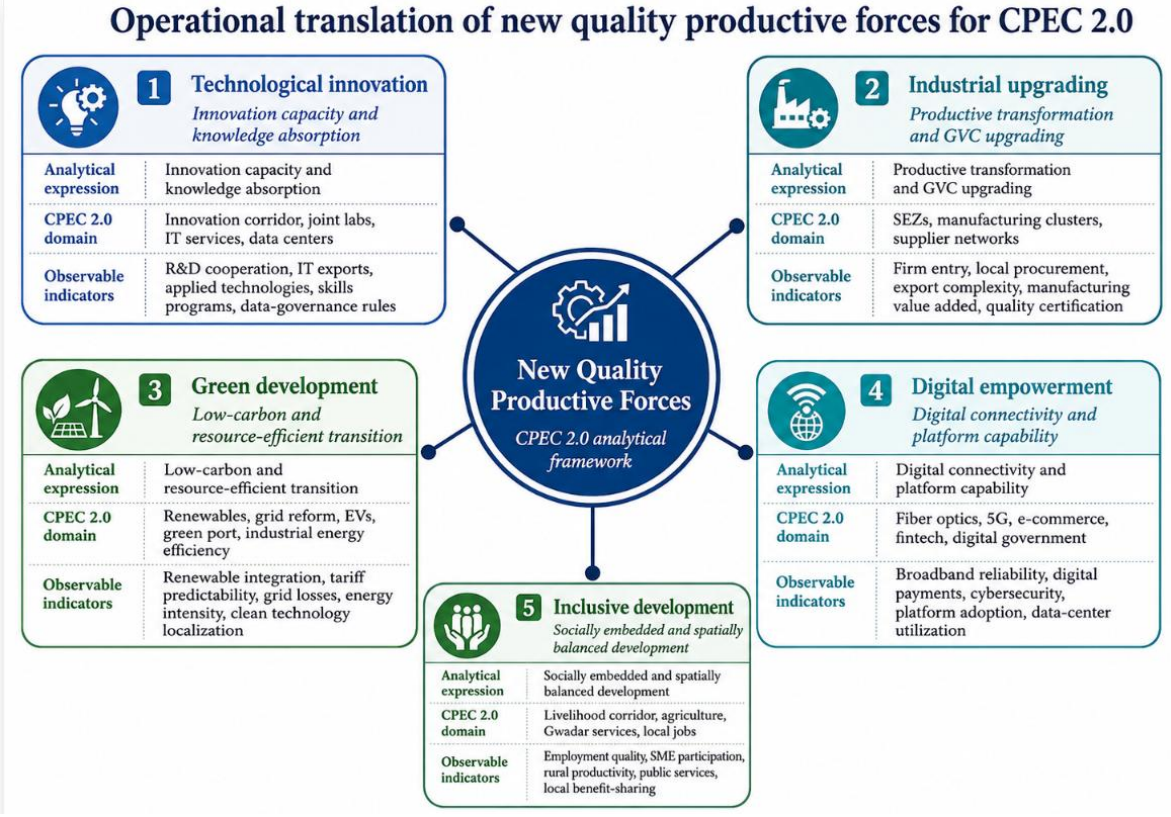

Fig. 1. Analytical framework linking CPEC 1.0 infrastructure assets to CPEC 2.0 productive conversion and high-quality development outcomes. Source: Author's design.

IV. Research Design

The study adopts a theory-guided qualitative case study combined with structured policy-document analysis, mechanism tracing, and indicator-based triangulation. CPEC 2.0 is selected because it is a major development corridor that has explicitly shifted from first-stage infrastructure delivery toward industrial, digital, green, agricultural, livelihood, and regional-connectivity objectives. The case is therefore suitable for evaluating whether infrastructure can be converted into productivity-enhancing capability.

The study does not claim a complete causal estimate. Many CPEC 2.0 projects remain at planning, memorandum, or early implementation stages. The appropriate analytical task is therefore not to estimate final causal effects, but to assess whether the proposed conversion mechanisms are institutionally and economically credible, what evidence exists at each stage, and which constraints are most likely to block development outcomes.

The policy-text component compares three groups of documents: foundational CPEC 1.0 materials, CPEC 2.0 policy statements and bilateral announcements, and third-party reports from international organizations and investment-climate sources. The corpus consists of official CPEC and Pakistani planning documents, international organization reports, investment-climate documents, current-events reporting used for time-sensitive developments, and academic works on SEZs, GVCs, absorptive capacity, and industrial policy. Documents are read using a deductive coding scheme derived from the conceptual framework: industrial upgrading, innovation and digitalization, green transition, livelihood inclusion, and regional connectivity. For each category, the analysis distinguishes policy intention, implementation mechanism, and measurable outcome.

Mechanism tracing proceeds in three steps. First, it compares the dominant development logic of CPEC 1.0 and CPEC 2.0. Second, it traces five conversion mechanisms: SEZ-led industrial upgrading, digital connectivity and innovation capacity, green transition and energy reliability, agricultural modernization, and Gwadar-linked regional connectivity. Third, it evaluates structural constraints that may interrupt those mechanisms: security risk, energy-sector debt, limited absorptive capacity, institutional fragmentation, local exclusion, and regulatory uncertainty.

Indicators are used as triangulating evidence rather than as a formal econometric test. World Bank development updates and Pakistan's official economic reporting are used to establish the macroeconomic environment rather than to attribute outcomes mechanically to CPEC [24], [25], [27]. The analysis separates context indicators from mechanism and outcome indicators. Context indicators describe Pakistan's macroeconomic environment. Mechanism indicators show whether conversion mechanisms are functioning. Outcome indicators test whether new productive capacity is emerging.

This design has limits. Public project-level data on CPEC 2.0 firm performance, local procurement, employment quality, productivity, and spillovers remain incomplete. Some initiatives are at the memorandum or early implementation stage. The study therefore offers a structured mechanism-based assessment rather than a definitive causal evaluation. Future research should use firm-level surveys in CPEC SEZs, customs and logistics data, satellite and port-traffic data for Gwadar, province-level panels, and interviews with firms, local officials, and affected communities.

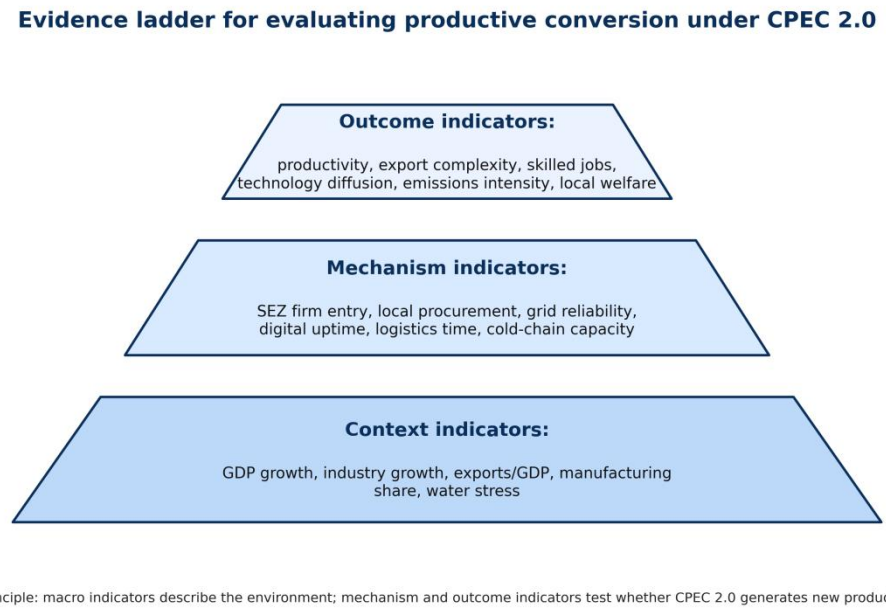

Fig. 2. Evidence ladder for evaluating productive conversion under CPEC 2.0. Source: Author's design.

V. From CPEC 1.0 to CPEC 2.0: Evidence of a Shift in Development Logic

CPEC 1.0 was dominated by infrastructure accumulation. Its early logic was to relieve Pakistan's infrastructure bottlenecks by expanding power generation, improving road connectivity, developing Gwadar, and supporting communication links. Energy projects were especially important because electricity shortages had constrained industrial production and household welfare. Transport projects aimed to reduce logistics frictions and improve spatial connectivity. Gwadar was presented as the corridor's maritime anchor. In development terms, CPEC 1.0 focused on the supply-side preconditions of growth: electricity, roads, port access, and basic corridor connectivity [5], [29].

This first-stage logic was not unreasonable. Pakistan required infrastructure investment, and infrastructure constraints can prevent industrial growth. The limitation is that infrastructure accumulation can be mistaken for structural transformation. Additional megawatts, highways, and port assets do not automatically produce high-productivity firms, export upgrading, technological learning, or local inclusion. CPEC 2.0 is therefore best understood as a test of whether first-stage assets can be embedded in productive systems.

CPEC 2.0 has a different official logic. Its framing around growth, innovation, green development, livelihood, and regional connectivity signals a move from project delivery toward development quality [1], [2]. The Planning Commission's Phase II language explicitly calls for a Pakistan-China Digital Silk Road program involving 5G, fiber optics, data centers, and joint laboratories in artificial intelligence and quantum computing [2]. Recent bilateral statements also emphasize high-quality CPEC development, Gwadar as a regional connectivity hub, and upgrades to the Khunjerab Pass and Karakoram Highway [3]. Investment announcements in 2025 and 2026 have highlighted agriculture, renewable energy, electric vehicles, health, steel, energy storage, and pharmaceutical manufacturing, rather than only traditional infrastructure [6], [28].

The analytical implication is that the evaluation standard must change. The first phase could be assessed partly by construction completion, energy additions, and connectivity assets. The second phase must be assessed by productive effects: firm entry, local procurement, export growth, value addition, technology diffusion, skills, green reliability, logistics performance, and local benefit-sharing. This does not mean that CPEC 1.0 and CPEC 2.0 are strictly separate in time. Infrastructure projects continue, and industrial ambitions existed earlier. The distinction is analytical: CPEC 2.0 foregrounds conversion rather than accumulation.

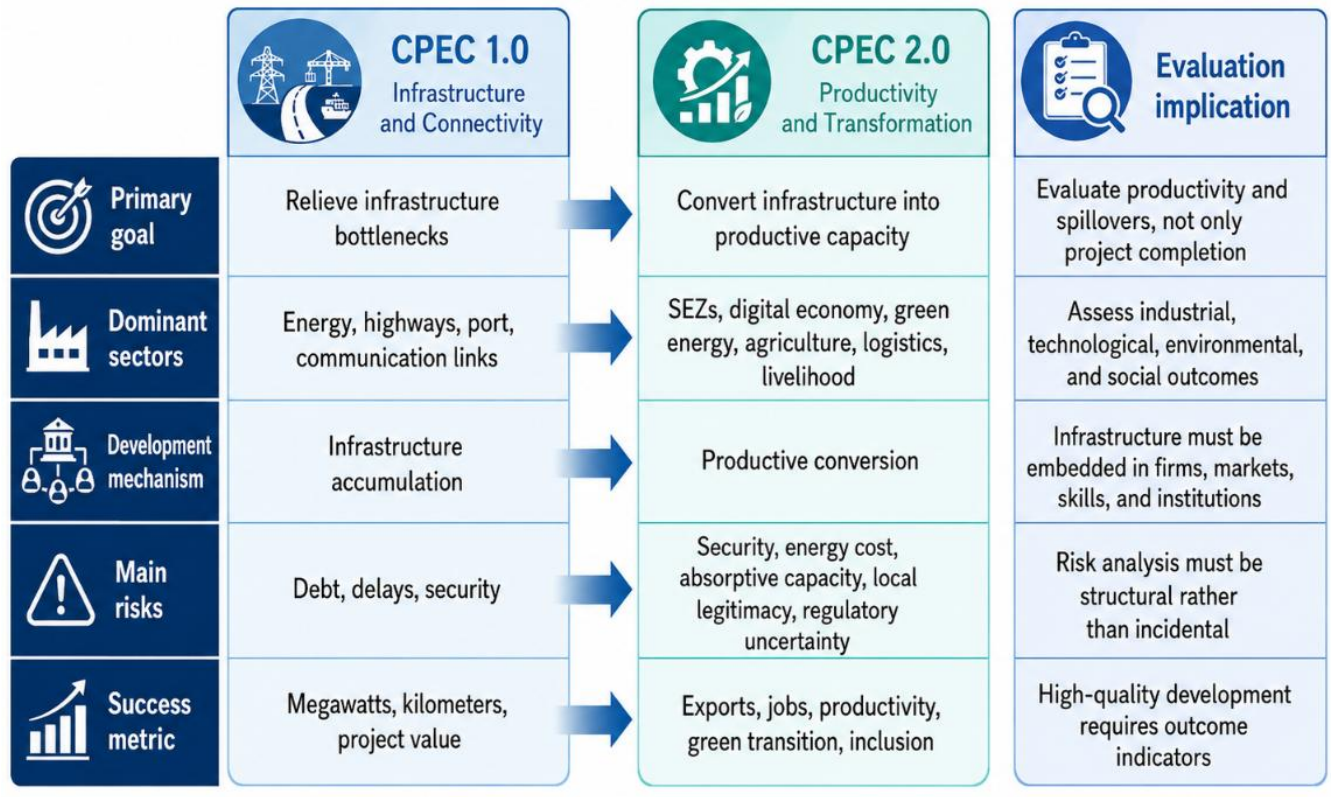

Fig3 . Development logic of CPEC 1.0 and CPEC 2.0.

VI. Productive Conversion Mechanisms under CPEC 2.0

6.1 SEZs and industrial upgrading

SEZs are the most direct institutional mechanism through which CPEC 2.0 could convert infrastructure into industrial productive capacity. Rashakai, Allama Iqbal Industrial City, Dhabeji, Bostan, and other designated zones are intended to attract firms, cluster production, and connect local suppliers with foreign capital and technology. Official CPEC materials list industrial cooperation and SEZs as central components of the corridor [12]. However, the developmental question is not whether zones exist on paper, but whether they generate firm-level upgrading.

A zone becomes a source of new quality productive forces only if it creates productive linkages: local input sourcing, labor training, technology transfer, logistics efficiency, quality certification, and export orientation. Comparative SEZ literature shows that zones often fail when they are treated as real-estate or tax-incentive instruments rather than as coordinated industrial ecosystems [7], [8]. For Pakistan, this warning is especially important because manufacturing value added remains modest, exports remain low relative to GDP, and private-sector credit constraints limit the ability of domestic firms to participate in supplier networks [13], [14], [15].

The implementation evidence remains mixed. CPEC SEZs provide a platform for coordinated infrastructure, customs facilitation, and targeted incentives, but public evidence on production starts, zone-level exports, local procurement ratios, and technology transfer remains limited. This does not mean the SEZ mechanism has failed; it means that the strongest evidence is still largely mechanism-level rather than outcome-level. The SEZ proposition will become convincing only if zone data show a rising number of operational firms, domestic supplier contracts, skilled employment, exports from zones, and local value addition.

6.2 Digital connectivity and innovation capacity

Digital CPEC should not be understood merely as a communication-infrastructure project. Under CPEC 2.0, digital connectivity can become a platform for innovation-oriented productive capacity if it supports e-commerce, logistics platforms, digital payments, data centers, artificial-intelligence applications, and digital government. The Planning Commission's Phase II agenda refers to 5G, fiber optics, data centers, and joint laboratories in artificial intelligence and quantum computing [2].

Pakistan has real potential in digital services. Reuters reported that Pakistan's IT exports reached US$3.2 billion in the fiscal year ending June 2024 [16]. At the same time, digital productive forces require trust and reliability. Industry concerns about internet disruptions, VPN instability, firewall-related uncertainty, and data-privacy fears illustrate that digital infrastructure alone is not enough [16]. ADB's digital diagnostic similarly emphasizes the importance of resilient infrastructure, data governance, cybersecurity, digital skills, and institutional coordination [17].

The evidence status is therefore uneven. The context indicator, IT exports, suggests digital potential; the mechanism indicators, such as network reliability, data-center utilization, cybersecurity compliance, and regulatory predictability, are more decisive for judging whether digital CPEC becomes productive capacity. If internet reliability is weak or data policy is unpredictable, digital infrastructure may fail to generate new quality productive forces despite investment in hardware.

6.3 Green corridor, energy reform, and industrial competitiveness

The green corridor is central to whether CPEC 2.0 can move beyond the first-stage energy-supply model. CPEC 1.0 energy projects helped address shortages, but Pakistan's energy system continues to face affordability, circular debt, tariff uncertainty, and distribution-reform challenges. A green productive-forces approach requires not simply adding renewable projects, but restructuring the energy-industry-fiscal nexus.

The constraint is severe. In June 2025, Pakistan signed term sheets with 18 commercial banks for a Rs 1.275 trillion, approximately US$4.5 billion, Islamic finance facility to address power-sector debt [18]. IMF reporting also identifies energy-sector reform as a core component of Pakistan's macroeconomic adjustment [19]. These data matter for CPEC 2.0 because high electricity costs and payment arrears directly affect SEZ competitiveness. A manufacturing-oriented corridor cannot succeed if firms face unreliable or expensive power.

Green new quality productive forces are most likely to emerge where energy reform and industrial policy are integrated. Renewable power can support export-oriented zones only if tariffs are predictable and grid access is reliable. Electric-vehicle cooperation can create industrial upgrading only if it produces local components, battery services, charging infrastructure, and technical skills rather than import-dependent assembly. Green port development at Gwadar can enhance logistics competitiveness only if it is linked to power, water, waste management, and urban services. The quality of the productive force depends on systemic integration, not simply on the presence of green projects.

6.4 Agricultural modernization and livelihood-oriented productivity

Agriculture is often underemphasized in CPEC analysis, yet it is central to livelihood-oriented productive transformation. Pakistan's agricultural sector employs a large share of the population and remains vulnerable to water stress, climate shocks, low mechanization, weak cold chains, and limited processing capacity. CPEC 2.0 can contribute to new quality productive forces if agricultural cooperation supports water-saving irrigation, mechanization, seed technology, cold-chain logistics, agro-processing, and rural e-commerce.

The data underline the urgency. The State Bank of Pakistan's annual reporting highlights severe water constraints, including declining per-capita water availability and high water stress, with agriculture as a major contributor [20]. These figures imply that agricultural modernization cannot be separated from resource efficiency. Smart irrigation and water-saving technologies are not simply livelihood measures; they are productivity and resilience measures. A CPEC 2.0 agricultural agenda that ignores water constraints would not qualify as high-quality development.

The agriculture mechanism has strong inclusion potential but weak public outcome evidence. A credible evaluation would require indicators such as cold-chain capacity, post-harvest loss reduction, water-saving technology adoption, agro-processing exports, rural non-farm employment, and farmer access to logistics and digital platforms. Without these data, agriculture remains a plausible but undermeasured conversion channel.

6.5 Gwadar and regional connectivity

Gwadar remains a symbolic and strategic anchor of CPEC, but the CPEC 2.0 question is whether it can become a commercially viable, industrially embedded, and locally inclusive hub. Recent China-Pakistan statements emphasized developing Gwadar as a regional connectivity hub, welcoming third-party participation, and upgrading related infrastructure [3]. These commitments confirm Gwadar's continued centrality. Yet the analytical issue is not strategic symbolism; it is economic functionality.

For Gwadar to generate new quality productive forces, port facilities must be linked with hinterland connectivity, free-zone development, logistics services, airport operations, urban infrastructure, water and electricity supply, fisheries upgrading, and local employment. Without these linkages, a port can remain underutilized. With them, it can support trade, warehousing, maritime services, manufacturing, fisheries value chains, and regional connectivity with Afghanistan, Central Asia, Iran, and the Gulf. If Gwadar communities experience displacement, water shortages, limited employment, and security pressure without visible benefits, the port's developmental legitimacy will remain fragile. A productivity-oriented Gwadar strategy should integrate commercial viability, industrial embedding, and local inclusion. The strongest evidence for success would be rising cargo volumes, free-zone output, logistics-service activity, municipal-service delivery, local employment, and regional trade flows.

VII. Structural Constraints and the Limits of Productive Transformation

Security is the most visible constraint on CPEC 2.0. Repeated attacks on Chinese workers, CPEC-linked projects, and transport infrastructure have made security a direct economic variable [3], [6]. Security risk affects productive transformation through multiple channels: it raises project costs, delays implementation, discourages private investors, restricts mobility, and can intensify local alienation if development is experienced primarily through checkpoints and securitized governance. For CPEC 2.0, the question is not only whether projects can be guarded. It is whether development can be made legitimate enough to reduce the political economy of violence.

Energy-sector debt is not merely a macroeconomic problem; it is a direct constraint on industrial upgrading. SEZs and manufacturing firms require affordable, reliable electricity. If circular debt, subsidies, collection losses, and tariff uncertainty persist, the cost base for manufacturing will remain high. The Rs 1.275 trillion power-sector financing facility in 2025 shows the scale of liquidity pressure [18]. IMF reporting also treats energy-sector reform as a key condition for stabilization [19]. CPEC 2.0 cannot generate green or industrial new quality productive forces if energy reform remains incomplete.

Absorptive capacity is the central mediating variable in this article. Foreign investment and infrastructure create opportunities, but they do not automatically produce local technological capability. Domestic firms must be able to enter supplier networks; workers must have relevant skills; regulators must facilitate business; and financial systems must support productive investment. The International Growth Centre's Pakistan Growth Framework notes that domestic credit to Pakistan's private sector was only 15 percent of GDP in 2022, the lowest among major regional economies [15]. This points to a structural constraint: local firms may lack the finance needed to take advantage of CPEC-related opportunities.

Institutional coordination and policy continuity also matter. CPEC 2.0 is not a single project. It is a coordination problem across energy policy, industrial policy, investment regulation, trade facilitation, digital governance, agricultural modernization, provincial administration, municipal service delivery, and security. Weak coordination can turn a corridor into fragmented assets: a road without industrial users, an SEZ without suppliers, a port without cargo, a data center without trusted governance, or a renewable project without grid integration.

Local inclusion is not peripheral to CPEC 2.0; it is a condition of sustainability. Balochistan and Gwadar illustrate the problem. If local communities perceive that they bear security restrictions, land-use changes, environmental pressure, and water shortages while receiving limited employment, electricity, municipal services, or supplier opportunities, corridor development will lack social legitimacy. Inclusive development requires benefit-sharing, local employment, skills programs, supplier participation, fisheries support, municipal services, and transparent consultation.

Investment confidence depends on contract enforcement, regulatory predictability, customs procedures, taxation, currency stability, repatriation rules, dispute settlement, and security; these factors are repeatedly highlighted in Pakistan investment-climate assessments [26]. Recent agreements suggest continuing Chinese interest: Pakistan announced US$8.5 billion in China-related investment agreements in 2025, including agriculture, renewable energy, electric vehicles, health,

and steel [6], and Chinese and Pakistani companies signed US$1.22 billion in cooperation agreements at a Hangzhou business conference in May 2026 [28]. These commitments show opportunity, but announced agreements do not equal productive transformation. Their developmental impact depends on implementation, local linkages, and macro-governance conditions.

Figure 4 summarizes the feedback loops among the major constraints. Security risk, local exclusion, energy-sector debt, high industrial costs, weak absorptive capacity, and low spillovers reinforce each other. This is why CPEC 2.0 requires governance reform rather than project management alone.

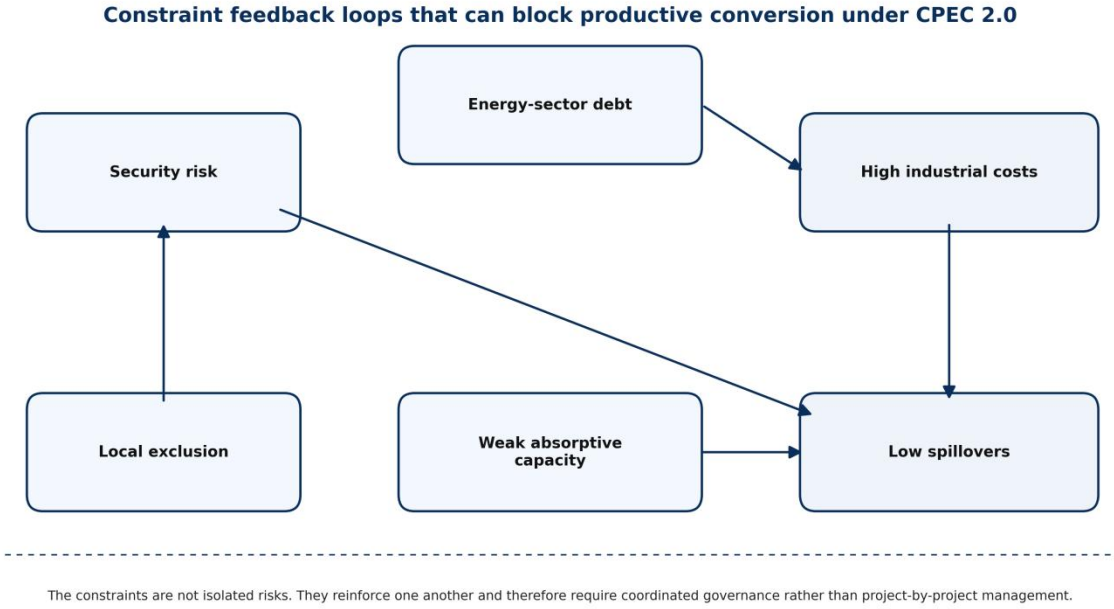

Fig. 4 Constraint feedback loops that can block productive conversion under CPEC 2.0. Source: Author's assessment.

8. Discussion and Conclusion

Can CPEC 2.0 generate new quality productive forces? The answer is conditional. CPEC 2.0 has the potential to do so because its agenda has moved beyond first-stage infrastructure toward SEZs, digital connectivity, green transition, agriculture, and Gwadar-linked regional integration. These are precisely the domains where innovation-driven, green-digital, productivity-enhancing capacity could emerge. However, the evidence also shows that the conversion process remains fragile. Pakistan's manufacturing share is modest, exports remain low relative to GDP, industry growth has been uneven, the power sector remains financially stressed, digital governance is uncertain, and security risks continue to affect investor confidence.

The main finding is that CPEC 2.0 should be evaluated by conversion quality rather than project volume. The relevant question is not how many agreements are signed, but whether signed agreements become firms, whether firms generate local supplier linkages, whether supplier linkages generate learning, whether learning improves productivity and exports, and whether local communities experience visible welfare gains. This chain is the practical meaning of new quality productive forces in the CPEC context.

The study contributes theoretically by translating new quality productive forces into an international development framework. It shows that the concept can be used analytically if decomposed into technological innovation, industrial upgrading, green transition, digital connectivity, and inclusive development. This translation connects Chinese policy discourse with comparative political economy, development corridors, global value chains, absorptive capacity, and industrial-policy scholarship. It also shifts the CPEC debate from a binary question of success or failure to a mechanism-based question of conversion.

For China, the implication is that project delivery is no longer enough. CPEC 2.0 requires supplier development, local training, green technology transfer, data-governance standards, and local legitimacy. For Pakistan, the main implication is that CPEC 2.0 must be embedded in domestic reform: energy-sector restructuring, SEZ governance, investment facilitation, SME finance, skills upgrading, digital regulation, and local benefit-sharing. For both countries, Gwadar should be treated not merely as a strategic symbol but as a port-city-industrial ecosystem whose viability depends on cargo, logistics, utilities, local employment, fisheries upgrading, municipal services, and regional trade.

A practical monitoring system for CPEC 2.0 should publish mechanism and outcome indicators at regular intervals. These should include SEZ firm entry, production start-ups, local procurement ratios, exports from zones, skilled employment, electricity reliability and tariff predictability, renewable-energy integration, data-center utilization, digital-service exports, cold-chain capacity, Gwadar cargo volumes, municipal-service delivery, and local employment shares. Without such indicators, the corridor will continue to be evaluated by headline investment figures that do not measure productive transformation.

The study is limited by the fact that CPEC 2.0 is still unfolding. Many projects are in planning, negotiation, or early implementation stages, and public project-level data remain incomplete. The analysis therefore does not claim that CPEC 2.0 has already generated new quality productive forces. It argues that the concept is useful only if tested through observable conversion mechanisms and outcome indicators. Future research should conduct firm-level surveys in CPEC SEZs, compare CPEC zones with non-CPEC industrial clusters, use port and logistics data for Gwadar, examine digital-economy performance under regulatory uncertainty, and analyze province-level distributional effects.

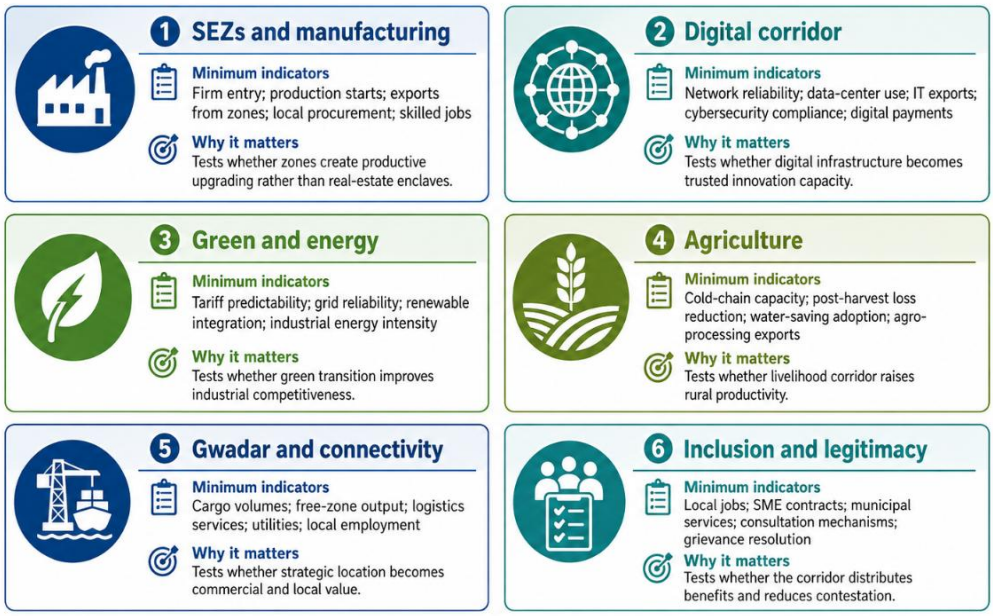

Fig 5 . Minimum monitoring indicators for a high-quality CPEC 2.0 evaluation system.

CPEC 2.0 can generate new quality productive forces only if it becomes more than a portfolio of projects. It must become a system of productive conversion. Infrastructure must be linked to firms, skills, technology, green energy, digital platforms, local participation, and export markets. The corridor's future therefore depends less on whether more agreements are signed and more on whether Pakistan and China can convert connectivity into productivity, productivity into inclusion, and investment into long-term development capability. Potential is not performance. Performance will depend on whether the corridor generates measurable increases in industrial value added, exports, firm capability, green energy reliability, digital services, rural productivity, and local welfare. That is the standard by which the promise of new quality productive forces should be judged.

References

[1] China-Pakistan Economic Corridor Secretariat, "Minister Ahsan Iqbal reaffirms Pakistan's commitment to CPEC Phase-II," Government of Pakistan, 2025. [Online]. Available: https://cpec.gov.pk/news/317. Accessed: May 27, 2026.

[2] Planning Commission of Pakistan, "Pakistan and China enter new era of economic cooperation under CPEC Phase II," Government of Pakistan, Sept. 26, 2025. [Online]. Available: https://pc.gov.pk/web/press/get_press/1634. Accessed: May 27, 2026.

[3] Reuters, "China, Pakistan aim to revamp economic corridor, Gwadar port," Reuters, May 26, 2026. [Online]. Available: https://www.reuters.com/world/asia-pacific/china-pakistan-reach-new-broad-consensus-boosting-ties-2026-05-26/. Accessed: May 27, 2026.

[4] Research Institute of Economy, Trade and Industry, "China's new quality productive forces and the transformation of growth," RIETI, 2024. [Online]. Available: https://www.rieti.go.jp/. Accessed: May 27, 2026.

[5] Ministry of Planning, Development and Reform, Government of Pakistan, "Long Term Plan for China-Pakistan Economic Corridor," Government of Pakistan, 2017. [Online]. Available: https://cpec.gov.pk/brain/public/uploads/documents/CPEC-LTP.pdf. Accessed: May 27, 2026.

[6] Associated Press, "Pakistan prime minister signs $8.5 billion in investment deals with China," Associated Press, Sept. 5, 2025. [Online]. Available: https://apnews.com/article/70ca7b7098c11acf9a9d520328476c68. Accessed: May 27, 2026.

[7] T. Farole, "Special Economic Zones in Africa: Comparing Performance and Learning from Global Experience," Washington, DC: World Bank, 2011.

[8] UNCTAD, "World Investment Report 2019: Special Economic Zones," Geneva: United Nations, 2019.

[9] G. Gereffi, J. Humphrey, and T. Sturgeon, "The governance of global value chains," Review of International Political Economy, vol. 12, no. 1, pp. 78-104, 2005.

[10] J. Humphrey and H. Schmitz, "How does insertion in global value chains affect upgrading in industrial clusters?," Regional Studies, vol. 36, no. 9, pp. 1017-1027, 2002.

[11] W. M. Cohen and D. A. Levinthal, "Absorptive capacity: A new perspective on learning and innovation," Administrative Science Quarterly, vol. 35, no. 1, pp. 128-152, 1990.

[12] China-Pakistan Economic Corridor Secretariat, "Industrial cooperation and special economic zones," Government of Pakistan, 2026. [Online]. Available: https://cpec.gov.pk/special-economic-zones-projects. Accessed: May 27, 2026.

[13] World Bank, "Manufacturing, value added (% of GDP) - Pakistan," World Development Indicators, 2026. [Online]. Available: https://data.worldbank.org/indicator/NV.IND.MANF.ZS?locations=PK. Accessed: May 27, 2026.

[14] World Bank, "Exports of goods and services (% of GDP) - Pakistan," World Development Indicators, 2026. [Online]. Available: https://data.worldbank.org/indicator/NE.EXP.GNFS.ZS?locations=PK. Accessed: May 27, 2026.

[15] I. Nabi et al., "Pakistan Growth Framework," London: International Growth Centre, Apr. 2025.

[16] Reuters, "Pakistan's internet firewall could cost economy $300 million, association says," Reuters, Aug. 15, 2024. [Online]. Available: https://www.reuters.com/technology/pakistans-internet-firewall-could-cost-economy-300-million-association-says-2024-08-15/. Accessed: May 27, 2026.

[17] Asian Development Bank, "Pakistan's Digital Ecosystem: A Diagnostic Report," Manila: ADB, 2025.

[18] Reuters, "Pakistan signs $4.5 billion loans with local banks to ease power sector debt," Reuters, Jun. 20, 2025. [Online]. Available: https://www.reuters.com/sustainability/boards-policy-regulation/pakistan-signs-45-billion-loans-with-local-banks-ease-power-sector-debt-2025-06-20/. Accessed: May 27, 2026.

[19] International Monetary Fund, "Pakistan: First Review Under the Extended Arrangement Under the Extended Fund Facility," IMF Country Report, Washington, DC, May 2025.

[20] State Bank of Pakistan, "Annual Report on the State of Pakistan's Economy 2024-25," Karachi: State Bank of Pakistan, 2025.

[21] World Bank, "World Development Report 2020: Trading for Development in the Age of Global Value Chains," Washington, DC: World Bank, 2020.

[22] D. Rodrik, "Industrial policy for the twenty-first century," Harvard University Kennedy School of Government Faculty Research Working Paper, 2004.

[23] R. Hausmann and D. Rodrik, "Economic development as self-discovery," Journal of Development Economics, vol. 72, no. 2, pp. 603-633, 2003.

[24] World Bank, "Pakistan Development Update: Reimagining a Digital Pakistan," Washington, DC: World Bank, Apr. 2025.

[25] World Bank, "Pakistan Development Update: Staying the Course for Growth and Jobs," Washington, DC: World Bank, Oct. 2025.

[26] U.S. Department of State, "2025 Investment Climate Statements: Pakistan," U.S. Department of State, 2025. [Online]. Available: https://www.state.gov/reports/2025-investment-climate-statements/pakistan/. Accessed: May 27, 2026.

[27] Government of Pakistan, "Pakistan Economic Survey 2024-25," Islamabad: Finance Division, 2025.

[28] Reuters, "Pakistani, Chinese companies sign $1.22 billion deals at conference," Reuters, May 24, 2026. [Online]. Available: https://www.reuters.com/world/asia-pacific/pakistani-chinese-companies-sign-122-billion-deals-conference-2026-05-24/. Accessed: May 27, 2026.

[29] Reuters, "China and Pakistan launch economic corridor plan worth $46 billion," Reuters, Apr. 20, 2015. [Online]. Available: https://www.reuters.com/article/world/china-and-pakistan-launch-economic-corridor-plan-worth-46-billion-idUSKBN0NA12T/. Accessed: May 27, 2026.